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GENERAL VIEW

OF THE

WRITINGS

OF

L I N N E U S.

By RICHARD PULTENEY, M.D. & F.R.S.

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GENERAL VIEW

A GENERAL VIEW OF THE HISTORY OF THE UNITED STATES OF AMERICA, FROM THE FIRST SETTLEMENTS TO THE PRESENT TIME. BY J. BANKS, ESQ. OF NEW-YORK. IN TWO VOLUMES. VOL. I.

Jos. Banks

BY RICHARD BUTLER, M.D. & F.R.S.

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ADVERTISEMENT.

AS the Writer of this volume could not, for very obvious reasons, entertain the most distant intention of standing forth the professed Biographer of LINNÆUS, he wishes to preclude any undue expectations, by observing that, the few memoirs relating to the life of this celebrated Professor, which will be found interspersed in the first part of this *View*, were almost wholly collected from LINNÆUS's own writings, and other printed works; and serve, principally, to relieve the tediousness of a bare account of books, and to connect in a better manner the series and occasion of his publications. He regrets that his sources of intelligence have not been sufficiently copious to enable him to render these memoirs more equal to his wishes, and more worthy the acceptance of the public. To those who are conversant with the works of LINNÆUS, he is perfectly aware that these pages can afford but little amusement and still less information, and can have no merit in their eye, beyond that of recalling to their remembrance, a succession of facts and observations, with which they were before acquainted. They will, however, concur with him in wishing to diffuse the knowledge of the writings of so great a master, and in endeavouring to excite an emulation in younger minds, for that science which they cultivate.

All the works of LINNÆUS, as far as they have come to the Author's knowledge, are noticed in the succeeding pages; but, as most of them were subservient to his great object the *SYSTEM of NATURE*, the *outlines* of that work bear a principal part in this *View* of his writings.

The *CLASSIFICATION of DISEASES*, is but a small part of his works; yet, as LINNÆUS was an early writer

on that subject, which has since excited the attention of many physicians, and is at this day not sufficiently discussed, it hath therefore been exhibited more largely than many of his other writings.

The AMOENITATES ACADEMICÆ, although strictly speaking they are not LINNÆUS's own works, have yet so large a share of his authority stamped upon them, are so intimately connected with his writings, and, it is presumed, are so much less known than they deserve to be, that it was judged proper to give a *brief* account of the whole collection.

* The PAN SUECUS having been first presented to the *English* reader several years ago, by the Author of this volume, in a periodical publication, is here subjoined, with additional observations, and some improvements in the general arrangement of the tables.

Few or no criticisms on the *Linneæan* system will be found in these pages. No system yet invented can stand a rigorous examination through all its parts, and LINNÆUS was, perhaps, better acquainted than any other man with the defects of his own. The study of nature on scientific principles, notwithstanding the manifold improvements of later years, may yet justly be considered as in its infancy, and all arrangements hitherto proposed, have, in their turns, given way to others. At present the system of LINNÆUS possesses the advantage of a general superiority in the public approbation: how long it may enjoy this pre-eminence, time only can discover; in the mean while, it would be a more agreeable employment, to endeavour to strengthen its basis, supply its deficiencies, and candidly correct its errors, than to *object* to those anomalies and imperfections, which will most likely be ever inseparable from *artificial* arrangements; and as to *natural* method, it is, as yet so far unknown, that, in the *vegetable* kingdom Botanists themselves are not agreed on what principles it ought to be established.

A

GENERAL VIEW
OF THE
WRITINGS
OF THE LATE CELEBRATED
LINNÆUS, &c.

CHARLES VON LINNÉ, the son of a *Swedish* divine, was born May 24, 1707, at *Rosbult*, in the province of *Smaland*, in *Sweden*; of which place his father had the cure, when this son was born, but was soon after preferred to the living of *Stenbrikult*, in the same province, where dying in 1748, at the age of 70, he was succeeded in his cure by another son. We are told, in the commemoration-speech on this celebrated man, delivered in his *Swedish* majesty's presence, before the royal academy of sciences at *Stockholm*, that the ancestors of this family took their surnames of *Linnaeus*, *Lindelius*, and *Tiliander*, from a large *lime-tree*, or *linden-tree*, yet standing on the farm where *Linnaeus* was born; and that this origin of surnames, taken from natural objects, is not very uncommon in *Sweden*.

Rosbult

Stenbrikult

B

This

*Linnaeus was Linnaeus when he was born
changed it to Von Linné*

This eminent man, whose talents enabled him to reform the whole science of natural history, accumulated, very early in life, some of the highest honours that await the most successful proficient in medical science; since we find that he was made professor of *physic* and *botany*, in the university of *Upsal*, at the age of 34; and six years afterwards, physician to his sovereign, the late king *Adolphus*; who in the year 1753 honoured him still farther, by creating him knight of the order of the *Polar Star*. His honours did not terminate here, for in 1757 he was ennobled; and in 1776 the present king of *Sweden* accepted the resignation of his office, and rewarded his declining years by doubling his pension, and by a liberal donation of landed property, settled on him and his family.

It seems probable, that his father's example first gave *Linnaeus* a taste for the study of nature; who, as he has himself informed us, cultivated, as his first amusement, a garden plentifully stored with plants. Young *Linnaeus* soon became acquainted with these, as well as the indigenous ones of his neighbourhood. Yet, from the straightness of his father's income, our young naturalist was on the point of being destined to a mechanical employment: fortunately, however, this design was overruled. In 1717 he was sent to school at *Wexjö*, where, as his opportunities were enlarged, his progress in all his favourite pursuits was proportionably extended. At this early period he paid attention to other branches of natural history; particularly to the knowledge of insects: in which, as is manifest from his *oration* on the subject, he must
very

very early have made a great proficiency, since we find that he was not less successful herein, than in that of plants, having given them an arrangement, and established such characters of distinction, as have been universally followed by succeeding entomologists.

The first part of his academical education, *Linneus* received under professor *Stobæus*, at *Lund*, in *Scania*, who favoured his inclinations to the study of natural history. After a residence of about a year, he removed in 1728 to *Upsal*. Here he soon contracted a close friendship with *Artedi*, a native of the province of *Angermannia*, who had already been four years a student in that university, and, like himself, had a strong bent to the study of natural history in general, but particularly to *Ichthyology*. He was moreover well skilled in chemistry, and not unacquainted with botany, having been the inventor of that distinction in *umbelliferous* plants, arising from the differences of the *involucrum*. Emulation is the soul of improvement, and, heightened as it was in this instance by friendship, proved a most powerful incentive. These young men prosecuted their studies together with uncommon vigor, mutually communicating their observations, and laying their plans, so as to assist each other in every branch of natural history and physic.

Soon after his residence at *Upsal*, our author was also happy enough to obtain the favour of several gentlemen of established character in literature. He was in a particular manner encouraged in the pursuit of his studies by the patronage of

Dr. *Olaus Celsus*, at that time professor of divinity, and the restorer of natural history in *Sweden*; since so distinguished for oriental learning, and more particularly for his *Hierobotanicon*, or *Critical Dissertations on the Plants mentioned in Scripture*. This gentleman is said to have given LINNÆUS a large share of his esteem, and he was fortunate enough to obtain it very early after his removal to *Upsal*. He was at that time meditating his *Hierobotanicon*, and being struck with the diligence of *Linnaeus*, in describing the plants of the *Upsal* garden, and his extensive knowledge of their names, fortunately for him, at that time involved in difficulties, from the narrow circumstances of his parents, *Celsus* not only patronized him in a general way, but admitted him to his house, his table, and his library. Under such encouragement, it is not strange that our author made a rapid progress, both in his studies, and the esteem of the professors: in fact, we have a very striking proof of his merit and attainments, inasmuch as we find, that after only two years residence, he was thought sufficiently qualified to give lectures occasionally from the botanic chair, in the room of professor *Rudbeck*.

In the year 1731, the royal academy of sciences at *Upsal* having for some time meditated the design of improving the natural history of *Sweden*, at the instance particularly of professors *Celsus* and *Rudbeck*, deputed LINNÆUS to make the tour of *Lapland*, with the sole view of exploring the natural history of that arctic region; to which undertaking, his reputation, already high as a naturalist, and the strength of his constitution, equally recommended

commended him. This tour had been made for the first time, with the same view, by the elder *Rudbeck*, in 1695, at the command of *Charles XI*; but unfortunately the whole fruit of that expedition, except two or three copies of the *Campi Elysi*, perished in the dreadful fire of *Upsal*, in 1702.

As this expedition could not take place till the succeeding summer, *LINNÆUS* spent his winter with his friends and relations in the south; and particularly paid a visit, in January 1732, to his former preceptor *Stobæus*, at *Lund*; whom he left in February, to visit his native province of *Smaland*, and returned to *Upsal* about the middle of April, to prepare for his journey. He left *Upsal* the 13th of May, and took his route to *Gevalia*, or *Gevels*, the principal town of *Gestrícia*, 45 miles distant from *Upsal*. Hence he travelled through *Helsingland*, into *Medelpadia*, where he made an excursion, and ascended a remarkable mountain, before he reached *Hudwickswald*, the chief town of *Helsingland*. From hence he went through *Angermanland*, to *Hernösand*, a sea-port on the *Botnic* gulph, seventy miles distant from *Hudwickswald*. When he had proceeded thus far, he found it proper to retard his journey, as the spring was not sufficiently advanced; and took this opportunity of visiting those remarkable caverns on the summit of mount *Skula*, though at the hazard of his life.

When *LINNÆUS* arrived at *Uma*, in *West Bothnia*, about 96 miles from *Hernösand*, he quitted the public road, and took his course through the woods westward, in order first to traverse the most southern parts of *Lapland*. Being now come to

the country that was more particularly the object of his enquiries, equally a stranger to the language and to the manners of the people, and without any associate, he committed himself to the hospitality of the inhabitants, and never failed to experience it fully. He speaks in several places, with peculiar satisfaction, of the innocence and simplicity of their lives, and their freedom from diseases. In this excursion, he reached the mountains towards *Norway*, and, after encountering great hardships, returned into *West Bothnia*, quite exhausted with fatigue. He seems to have been much struck with the singular use that the *Laplanders* make of the *Pinguicula vulgaris*, which we call *Butterwort*, or *Yorkshire Sanicle*: They receive the milk of the rein-deer upon the fresh leaves of this plant, which they immediately strain off, and set aside, till it becomes somewhat acedcent, and the whole acquires, in a day or two, a consistence equal to that of cream, without separating the serum; and by this method it becomes an agreeable food. When thus prepared, a small quantity of the same has the property of rennet, in producing the like change on fresh milk. But to return: Our traveller next visited *Pitba* and *Lula*, upon the gulph of *Bothnia*, from which latter place he took again a western route, by proceeding up the river of that name, and visited the ruins of the temple of *Jock-mock*, in *Lula-Lapland* or *Lap-Mark*; thence, he traversed what is called the *Lapland Desert*, destitute of all villages, cultivation, roads, or any conveniences; inhabited only by a few straggling people, originally descended from the *Finlanders*, and who settled

settled in this country in remote ages, being entirely a distinct people from the *Laplanders*. In this district he ascended a noted mountain called *Wallevari*, in speaking of which he has given us a pleasant relation of his finding a singular and beautiful new plant (*Andromeda tetragona*) when travelling within the arctic circle, with the sun in his view at midnight, in search of a *Lapland* hut. From hence he crossed the *Lapland Alps* into *Finmark*, and traversed the shores of the North sea as far as *Sallero*.

These journeys from *Lula* and *Pitba*, on the *Botbnian* gulph, to the north shore, were made on foot, and our traveller was attended by two *Laplanders*; one his interpreter, and the other his guide. He tells us that the vigour and strength of these two men, both old, and sufficiently loaded with his baggage, excited his admiration, since they appeared quite unhurt by their labour, while he himself, although young and robust, was frequently quite exhausted. In this journey he was wont to sleep under the boat with which they forded the rivers, as a defence against rain, and the gnats, which in the *Lapland* summer are not less teasing than in the torrid zones. In descending one of these rivers, he narrowly escaped perishing by the upsetting of the boat, and lost many of the natural productions which he had collected.

LINNÆUS thus spent the greater part of the summer in examining this arctic region, and those mountains, on which, four years afterwards, the

French philosophers secured immortal fame to Sir *Isaac Newton*. At length, after having suffered incredible fatigues and hardships, in climbing precipices, passing rivers in miserable boats, suffering repeated vicissitudes of extreme heat and cold, and not unfrequently hunger and thirst; he returned to *Tornaa* in September. He did not take the same route from *Tornaa* as when he came into *Lapland*, having determined to visit, and examine, the country on the eastern side of the *Bothnian* gulph: his first stage, therefore, was to *Ula*, in *East Bothnia*; from thence to *Old* and *New Carleby*, 84 miles south from *Ula*. He continued his route through *Wasa*, *Christiansburg*, *Naasa*, and *Bjorneburgh*, to *Abo*, a small university in *Finland*. Winter was now setting in apace, he therefore crossed the gulph by the island of *Aland*, and arrived at *Upsal* in November, after having performed, and that mostly on foot, a journey of ten degrees of latitude in extent, exclusive of those deviations which such a design rendered necessary.

The result of this journey was not published till several years afterwards, during his residence in *Holland*. For the present he only gave in to the academy a *Florula Lapponica*, consisting of a very few pages in the *Acta Upsalienſia* for the years 1732 and 1734. In this little catalogue the plants are disposed according to the system which was afterwards called the *sexual*; and which we should not have mentioned here, but to prove how early *Linnaeus* had laid the foundation of that method, which he afterwards wrought up to such perfection.

In

In 1733 he visited and examined the several mines in *Sweden*, and made himself so well acquainted with *mineralogy*, and the *docimastic* art, that we find he was sufficiently qualified to give lectures on those subjects, upon his return to the university. The outlines of his system on mineralogy appeared in the early editions of the *Systema Naturæ*; but he did not exemplify the whole until the year 1768.

In the year 1734 LINNÆUS was sent by Baron *Reuterholm*, governor of *Dalekarlia*, with several other naturalists, into that province, to investigate the natural productions of that part of the *Swedish* dominions. Each gentleman had his particular department assigned; and they noted daily the observations made relating to geography, &c.; but particularly, and as their principal object, the economical and natural history, and mineralogy. A full account of these observations was intended to have been published, but the design was laid aside. It was in this journey that our author first laid the plan of an excellent institution, which was afterwards executed in a certain degree at least, by himself, with the assistance of many of his pupils, and the result published under the title of *Pan Suecus*, in the second volume of the *Amanitates Academicæ*.

After the completion of this expedition, it appears that LINNÆUS resided for a time at *Fahlun*, the principal town in *Dalekarlia*; where he tells us that he taught *mineralogy*, and the *docimastic* art, and practised physic; and where he was very hospitably treated by Dr. *Morff*, the physician of *Åus*
the

the place. It also appears, that he contracted at this time an intimacy with one of that gentleman's daughters, whom he married about five years afterwards, upon his settling as a *physician* at *Stockholm*.

In this journey he extended his travels quite across the *Dalekarlian Alps* into *Norway*; but we have no particular account of his discoveries in that kingdom. From its situation, however, in the same parallels of latitude and of longitude, nearly, with *Sweden*, as well as from the face of the country, but little variety could be expected; and from the *Flora Norwegica* of Bp. Gunnerus, *1765* since published, the vegetable productions of nature appear to be nearly the same, except that the *Norway* coast abounds with *fuci* or sea-wracks, not known in the *Baltic*.

In the year 1735, LINNÆUS travelled over many other parts of *Sweden*, some parts of *Denmark* and *Germany*, and fixed in *Holland*, where he chiefly resided until his return to *Stockholm*, about the year 1739. He here took his doctor's degree in physic, in June 1735. How clearly the great *Boerhaave* saw his merit will appear hereafter. On the present occasion he sustained a *thesis* under the title of *HYPOTHESIS NOVA de febrium intermittentium causa*. It is an enquiry into the causes of the frequency of that distemper in *Sweden*, particularly in *Upland*, and the south-east parts of that kingdom; which he was inclined to attribute to a *local* cause, after the most minute scrutiny into the soil and situation of those places where this distemper was so remarkably prevalent and obstinate;

obstinate; and finally proposes, Whether it might not be owing to the strong impregnation of the water with *argillaceous* particles? Whether or not he afterwards adhered to this opinion, we are uncertain, as it is but justice to observe, that he did not republish this tract himself, since it was placed at the head of the first volume of the *Amanitates*, printed at *Leyden*, as we believe, without his knowledge, by Dr. *Peter Camper*. In the mean time we may observe, that howsoever insufficient this *hypothesis* may be to solve the difficulties that have attended the search into the remote causes of this disease; the advocates of the modern theory, relating to it, may think the author's facts, of its frequency in *low* situations, confirm and illustrate in no small degree their own, according to which it is imputed to *miasmata* arising from moist and marshy ground.

In this year LINNÆUS also published the first sketch of his *Systema Naturæ*, in a very compendious way, and in the form of tables only, in twelve pages *in folio*. By this it appears, that he had at a very early period of his life (certainly before he was 24 years old) laid the basis of that great structure which he afterwards raised, not only to the increase of his own fame, but to that of natural science.

In 1736, LINNÆUS came into *England*, and visited Dr. *Dillenius*, the late learned professor at *Oxford*, whom he justly considered as one of the first botanists in *Europe*. He mentions with particular respect the civilities he received from him,
and

and the privileges he gave him of inspecting his own, and the *Sherardian* collections of plants. It is needless to say, that he visited Dr. *Martyn*, Mr. *Rand*, and Mr. *Miller*, and that he was in a more singular manner indebted to the friendship of Dr. *Isaac Lawson*. He also "contracted an intimate friendship with Mr. PETER COLLINSON, which "was reciprocally increased by a multitude of "good offices, and continued to the last without "any diminution." Dr. *Boerhaave* had furnished him with letters to our great naturalist Sir HANS SLOANE; but, it is with regret that we must observe, they did not procure him the reception which the warmth of his recommendation seemed to claim.

Dr. *Boerhaave*'s letter to Sir *Hans Sloane*, on this occasion, is preserved in the British Museum, and runs thus—"LINNÆUS, qui has tibi dabit literas, est "unice dignus te videre, unice dignus a te videri; qui "vos videbit simul, videbit hominum par, cui simile "vix dabit orbis."—This encomium, howsoever quaintly expressed, yet was in some measure prophetic of *Linnaeus*'s future fame and greatness, and proves how intimately *Boerhaave* had penetrated into the genius and abilities of our author; and, strained as this parallel might be thought, it is likely however that the opening of the *sexual* system, so different from *Ray*'s, by which Sir *Hans Sloane* had always known plants, and particularly the innovations, as they were then called, which LINNÆUS had made in altering the names of so many genera, were rather the cause of that coolness with which he was received by our excellent naturalist.

Probably

Probably we have reason to regret this circumstance; for otherwise LINNÆUS might have obtained an establishment in *England*, as it has been thought he wished to have done; and doubtless his opportunities in this kingdom would have been much more favourable to his designs, than in those arctic regions where he spent the remainder of his days. In the mean time, we may justly infer the exalted idea that *Linnaeus* had of *England*, as a land eminently favourable to the improvement of science, from that compliment which, in a letter to a friend, he afterwards paid to *London*, when, speaking of that city, he called it "*Punctum saliens in vitello orbis.*" However, the *English* naturalists may now congratulate themselves on having adopted a most excellent disciple of the *Linnean* school; who, with an illustrious associate, shared the perils of a navigation round this globe, incited by thirst of knowledge alone; and who now enjoys that general esteem among us which is due to his extensive science, and to his singular liberality of mind and manners.

One of the most agreeable circumstances that happened to LINNÆUS, during his residence in *Holland*, arose from the patronage of Mr. *Clifford*, in whose house * he lived a considerable part of his time, being now as it were the child of fortune:—*Exivi patriâ triginta sex nummis aureis dives*—are his own words. With Mr. *Clifford*,

* The country seat and garden of Mr. *Clifford* was at *Haricamp*, about three miles from *Harlem*.

however,

however, he enjoyed pleasures and privileges scarcely at that time to be met with elsewhere in the world; that of a garden excellently stored with the finest exotics, and a library furnished with almost every botanic author of note. How happy he found himself in this situation, those only who have felt the same kind of ardour can conceive.

Whilst in *Holland*, our author was recommended by *Boerhaave* to fill the place, then vacant, of physician to the *Dutch* settlement at *Surinam*; but he declined it, on account of his having been educated in so opposite a climate. He recommended, however, to that department a young German physician of great merit, who had the misfortune to fall a sacrifice, partly to the climate, and partly perhaps to ill usage from the governor, in half a year after his arrival: A circumstance which *LINNÆUS* has very pathetically lamented in the *Flora Suecica*, N^o 515, when treating of a plant to which he has given this gentleman's name.

Besides being favoured with the particular patronage and friendship of *Boerhaave* and Mr. *Clifford*, as is above-mentioned, our author had also the pleasure of being contemporary with, and of reckoning among the number of his friends, many other learned persons, who have since proved ornaments to their profession, and whose merit has most deservedly raised them to fame and honour. Among these we may properly mention Dr. *John Burman*, professor of botany at *Amsterdam*, whose name and family are well known in the republic of letters,

letters, to whom our author dedicated his *Bibliotheca Botanica*, having been greatly assisted in compiling that work, by the free access he had to that gentleman's excellent library; *John Frederick Gronovius*, of *Leyden*, editor of *Clayton's Flora Virginica*, and who very early adopted *Linnaeus's* system; *Baron Van Swieten*, late physician to the Empress Queen; *Isaac Lawson*, before-mentioned, afterwards one of the physicians to the British army, who died much regretted at *Oosterhout*, in the year 1747, and from whom *Linnaeus* received singular and very important civilities; *Kramer*, since well known for an excellent treatise on the Docimastic Art; *Van Royen*, botanic professor at *Leyden*; *Lieberkun*, of *Berlin*, famous for his skill in microscopical instruments and experiments. On this occasion it is not foreign to our plan to remark, that *LINNAEUS*, being present with several of these gentlemen, at a meeting when the latter was exhibiting the animalcules in *semine masculino*, openly declared his opinion, that these *moleculæ* were not true animalcules; and he appears ever afterwards to have retained the same opinion relating to them. To these may be added also the names of *Albinus* and *Gaubius*, and of others, were it requisite, to shew that our author's talents had very early rendered him conspicuous, and gained him the regard of all those who cultivated and patronized any branch of medical science; and to which, doubtless, the singular notice with which *Boerhaave* honoured him, did not a little contribute.

Early in the year 1738, after *LINNAEUS* had left

Mr.

Mr. *Clifford*, and, as it should seem, when he resided with *Van Royen*, at *Leyden*, he had a long and dangerous fit of sickness; and upon his recovery, went to *Paris*, where he was properly entertained by the *Jussieu's*, at that time the first botanists in *France*. The opportunity this gave him of inspecting the Herbaria of *Surian* and *Tournefort*, and those of the above-named gentlemen, afforded him great satisfaction. He had intended to have gone from thence into *Germany*, to visit *Ludwig*, and the celebrated *HALLER*, with whom he was in close correspondence; but he was not able to compleat this part of his intended route, and was obliged to return without this gratification.

Our author did not fail to avail himself of every advantage, that access to the several museums of this country afforded him, in every branch of natural history; and the number and importance of his publications, during this absence from his native country, sufficiently demonstrate that fund of knowledge which he must have imbibed before, and no less testify his extraordinary application. As these works laid the foundation of his future fame, and distinguished character, it will be incumbent on us to enumerate them, and give a brief account of each, as nearly as we can in the order of time in which they were published, before we accompany our author into *Sweden*; whither he returned to receive at length the reward of his merit.

The first of these was the *SYSTEMA NATURÆ*,
five regna tria Natura systematicè proposita, per
classes,

classes, ordines, genera et species. Lugd. Bat. 1735. fol. pp. 14; in Latin, with the *Swedish* names annexed. As this is little more than the general *outlines* of his work, we shall reserve a fuller account of it till we come to the enlarged editions; in which it was fully exemplified by the introduction of the *species*.

FUNDAMENTA BOTANICA, *quæ majorum operum prodromi instar, theoriâ Scientiæ Botanices per breves Aphorismos tradunt*. Amst. 1736, 12°, pp. 35. The science of botany is in this work reduced to 365 aphorisms; or canons; and what *Sethus Calvisius* has said of *Ptolemy's* canon, *mutatis mutandis*, may be truly said of this work.—*Omni auro pretiosior est, si dudum innotuisset, nec adeo in diversas sectas BOTANICI abiissent, sed RES BOTANICÆ, multo melius se haberent*. It passed through several editions, and was published with a comment upon each aphorism in 1751, under the title of *Philosophia Botanica*, hereafter to be noticed.

BIBLIOTHECA BOTANICA, *recensens libros plus mille de plantis hucusque editos, secundum Systema Auctorum naturale in classes, ordines, genera et species dispositos, additis editionis loco, tempore, forma, lingua*. Amst. 1736, 12°, pp. 153, and afterwards in 8°, 1751, much enlarged. Botanic writers are in this work distributed into 16 classes, and it is by no means so unentertaining as might be expected from the general idea of a catalogue merely; as the author has frequently subjoined short characters of the books; and at the beginning of each class, as also in the orders or subdivisions, takes occasion to explain several of his terms used in his subsequent writings.

writings. The preface contains a short history of the rise and progress of botany, and an acknowledgment of the aid the author received in the compilation of this work, by his free access to the libraries of Mr. *Sprekelsen* at *Hamburg*, Dr. *Gronovius* at *Leyden*, and particularly to those of his patron Mr. *Clifford*, and Dr. *Burman*, professor of botany at *Amsterdam*. Authors are classed in this work as follows :

- | | |
|--------------------------|---------------------------|
| 1. <i>Patres.</i> | 9. <i>Peregrinatores.</i> |
| 2. <i>Commentatores.</i> | 10. <i>Philosophi.</i> |
| 3. <i>Ichniographi.</i> | 11. <i>Systematici.</i> |
| 4. <i>Descriptores.</i> | 12. <i>Nomenclatores.</i> |
| 5. <i>Monographi.</i> | 13. <i>Anatomici.</i> |
| 6. <i>Curiosi.</i> | 14. <i>Hortulani.</i> |
| 7. <i>Adonistæ.</i> | 15. <i>Medici.</i> |
| 8. <i>Floristæ.</i> | 16. <i>Anomali.</i> |

Subjoined to the last edition, we have a biographical table, exhibiting, in chronological order, the names of 139 botanic authors, from the time of *Avicenna* in 981, to Mr. *Catesby* in 1749, specifying, wherever it was possible, the year of their birth and death.

The flowering of the *Plantain* or *Banana* (*Musa paradisiaca*) this year, a thing not seen in *Europe* before more than thrice, in the garden of our author's patron M. *Clifford*, produced a compleat history of that plant from *LINNÆUS*'s pen, under the title of *MUSA CLIFFORTIANA floreus Hartecampi 1736 prope Harlemum*. *Lugd. Bat.* 4°, pp. 46. This piece is drawn up with the utmost precision, according to the author's own *Methodus Demonstrandi*,
printed

printed at the end of the *Systema*, and is a model for *Monographers* in this way. It is embellished with two plates, one representing the plant at large, the other, the parts of fructification separately.

GENERA PLANTARUM eorumque Characteres naturales secundum numerum, figuram, situm, et proportionem, omnium fructificationis partium. Lugd. Bat. 1737; 8°, pp. 384. In this work, which exhibits what LINNÆUS has called the *natural characters* of the genera of plants, the *classes* are established upon the *number* or *situation*, or both conjointly, of the *stamina*, analogically considered as the male parts; and the *orders* or subdivisions of the classes, upon the *pistils*, analogous to the female parts: and the *genera* themselves from the agreement of all the parts of fructification compared with each other, as they agree in *number*, *figure*, *situation*, and *proportion*. Hence the *Linnean characters* of plants are applicable to any classical method founded on the parts of fructification alone, in which respect they have the advantage over those of all foregoing writers, and will probably stand firm, even although the *classical* part of the system should be set aside. This is to be considered as one of the capital of *Linneus's* works. He tells us, that before the publication of the first edition, he had examined the characters of 8000 flowers. Those alone who have been accustomed to examine plants with a scientific view, can judge how arduous this undertaking must have been, and how great the application that he must necessarily have bestowed thereon, and that at an early period of life. Neither can any others sufficiently admire that accuracy with which

so great a number of flowers *have been* examined and compared, or see the aptitude of that assemblage of terms, which were invented by LINNÆUS, to express the different *figure, situation, and proportion*, that exist in such a variety of subjects. If this was a proper place to expatiate upon this subject, by extending the idea to all that LINNÆUS has done, respecting every other part of plants, as considered in their *specific* distinctions, it must still farther exalt the merit of the author, and place him above all praise. At the latter end of this work was given the general plan of a system invented by LINNÆUS, and founded upon the different *kinds, and arrangement*, of the *calix* or cup of the flower, in plants: but this was omitted in the latter editions. Also a fragment of that *primum et ultimum* in botany, the *natural method*.

The first edition of this book contained 935 *genera*: the sixth and last, at *Stockholm*, in 1764, hath extended the number to 1239, and the *Maniffæ* since to 1336. It has been thought by some, that the first idea of the *sexual method* was received from the writings of *Jungius*, a learned professor, first at *Helmstadt*, and afterwards *rector* of the Gymnasium at *Hamburg*, where he died in 1657, and whose works contain an uncommon display of original observations on the subject of plants; and prove him to have been a most accurate observer of nature. He has not only discriminated with peculiar nicety, the structure, and several parts of plants, but he hath also, with equal judgment, shewn the impropriety of many of the old generical and specific distinctions,

tions, and has given rules for forming them anew, that have been of the greatest service to his successors in the science, and of which they have not failed to avail themselves. But *Jungius* did not, however, exhibit any plan, by which it appears that he laid the basis either of the sexual, or any other system.

Before the conclusion of the same year (1737) our author published the *COROLLARIUM GENERUM*, cui accedit *METHODUS SEXUALIS*, in 8°; the former contained only the addition of sixty new genera of plants; all which were taken into the next edition of the foregoing book; and the latter exhibits a brief view of the sexual system, as far as respects the *classes* and *orders*. Neither would it be of importance to mention a small piece published in the same year, during his residence with Mr. *Clifford*, under the title of *VIRIDARIUM CLIFFORTIANUM*, were it not incumbent on us to mention all that came from our author's pen.

In this year, 1737, appeared likewise the result of the *Lapland* expedition, as far, at least, as relates to the plants of that country; for we are now deprived of the expectation of ever seeing the *Lachesis Laponica*, intended to complete our author's history of this country through all its parts. This volume includes the plants of a tract of country not less than 100 *Swedish* miles (nearly equal to 600 *English*) in length, and 50 in breadth, under the title of *FLORA LAPPONICA, exhibens Plantas per Laponiam crescentes, secundum Systema sexuale, collectas in itinere impensis Societatis regiae Litterariae et Scientiarum Sueciae An. 1732 instituto, additis synonymis,*

nymis, et locis natalibus omnium, descriptionibus et figuris rariorum, viribus medicatis et æconomicis plurimarum. Amst. 1737, 8°, pp. 372, tab. 12. This work is much more than a bare enumeration of synonyms; the preface contains an account of the author's journey, and his acknowledgment to the members of a literary society, by whose munificence this work was adorned with the plates, on which are engraven 58 of the more rare, and chiefly *alpine* plants. This is preceded by additional *Prolegomena*, in which the *geographic* and *natural* description of the country is set forth, and the difference between the *Alps* and the *Desart* distinctly marked; concluding with some observations on *alpine* plants in general. The work is interspersed with many very curious observations relating to the inhabitants, their simplicity of life and manners, their diseases; the animals of the country; the medical and economical uses of many of the plants; descriptions at large of such as were not well described before; and critical observations, in a botanical way, upon others.

To instance briefly a few only of our author's observations. Under

N° 16. The dropsy very frequent in *East Bothnia*; owing to the intemperate use of spirits.

N° 22. The down of the *Cotton Grass*, used for bedding among the poor, instead of feathers.

N° 62. Astonishing growth of the *Great Plantain*. The spikes 4 or 5 feet high. In other situations, the whole plant not an inch.

N° 80. The wretched inhabitants sometimes obliged to make bread of the roots of the *Marsh Trefoil*.

Trefoil. The scurvy unknown in *Lapland*; although vegetable productions have scarcely any share in the *Lapland* diet, which is almost wholly the recent flesh of the rein-deer: a fact which Sir *John Pringle* has made good use of, among others, in his discourse "On the means of preserving the health of "mariners."

N° 101. Symptoms of the *Colica Lapponica*, (*Sauvag. Nosol. II. p. 103*) a most excruciating disease, for which the *Laplanders* use the root of *Angelica*.

N° 103. The deleterious effects of the *Cicuta virofa*, Water Hemlock, largely discussed.

N° 136. The pernicious effects of the *Anthericum ossifragum*, Lancashire Asphodel, on sheep.

N° 143, 144, 145. Manifold uses of the black and red Whortleberries, and Cranberries.

N° 160. Various economical uses of the *Andromeda polifolia*, Marsh Cistus.

N° 206. Observations on the gout, whether owing to the use of spirituous and fermented liquors. Reflections on the health and vigour of the *Laplanders*.

N° 311. The *Achillea Millefolium*, Yarrow, used sometimes in *Dalekarlia* instead of *bops*, and said to render the drink very intoxicating.

N° 328. Singular economical uses of the *Carices*, or Sedges, amongst the *Laplanders*.

N° 341, 342. Uses of the *Birch-tree*; and the *Dwarf Birch*, beyond almost all others. The thick woods of this tree frequently set on fire by lightning, and consumed for miles. Moxa of the *Laplanders*

landers prepared from a part of this tree : their universal remedy in painful diseases.

N° 345. The leaves of *Sparganium natans*, Bur-reed, preferred by horned cattle and horses to other grafs. Observations on the immense number of *Water Fowl*, and *Waders*, in *Lapland*, and on their migration.

N° 395. Uses of the *Polytrichum commune*, or Golden Maidenhair; and N° 415, those of the *Sphagnum Palustre*, or Bog-Moss, among the *Lapland* women; to which he has annexed some curious observations relating to the state of the menstrual evacuations in the sex, in those northern regions.

N° 437. Observations on the rein-deer, and their food, the *Lichen rangiferinus*.

N° 445. On the *Lichen islandicus*, on which M. *Scopoli* has of late written largely.

N° 517. In treating on the Agarics, he recites the baneful effects of the *Oestrus Tarandi*, Gad-fly, on the whole economy of the rein-deer. More largely discussed in the *Amanitates*.—But to return :

In this work, moreover, our author has first exemplified, what he ever afterwards laboured to bring to its greatest perfection, in all his writings, and particularly in the *Species Plantarum*, a work not published till sixteen years afterwards, the specific names of plants, not taken, as had been customary with former authors, from the colour of the flower, relative size of the plant, smell, taste, place of growth, time of flowering, name of the discoverer, virtues, uses, duration; none of which are sufficiently

sufficiently permanent : but from those invariable and essential parts, which fully and clearly distinguish each species under the same genus, and in the compass of ten or twelve words convey such an idea of the plant intended, as will more effectually distinguish it, than the *verbose descriptions* of many foregoing authors. LINNÆUS has taken incredible pains with this part of his system, which is certainly as difficult as any that leads to the perfection of the science, since it depends upon a nice inspection of *every species* belonging to each genus, and of every *actual variety* belonging to each species.

The plants of *Lapland* are but few, not amounting to more than 537 species ; and in this number are included upwards of an hundred discovered by *Linnaeus* in this journey, not known to be natives of *Sweden* before ; and of which some were non-descripts : among the former, there seems to be a propriety in mentioning specially the *Campanula serpyllifolia*, or thyme-leaved Bell-flower, which, as it turned out to be a new genus, was appropriated to our author by Dr. J. Gronovius, and engraved in this volume by the name of LINNÆA.

No part of LINNÆUS's writings had given more offence to the contemporary botanists, than the liberty he had taken in changing the *generic names* of plants, which had necessarily taken place in many instances, from the rules established by the *Fundamenta*. Even DILLENIUS was by no means reconciled to this innovation. LINNÆUS, who had entertained an high opinion of our *English* professor, having said of him—*nullus est in Anglia qui genera*

genera curat, vel intelligit præterquam Dillenius— probably, therefore, dedicated to him his next publication, the *CRITICA BOTANICA, in qua Nomina Plantarum generica, et specifica, et variantia examini subjiciuntur, selectiora confirmantur, indigna rejiciuntur, simulque doctrina circa Denominationem Plantarum traditur.* Lugd. Bat. 1737, 8°, pp. 270. This is a large comment upon the 7th, 8th, 9th, and 10th parts of the *Fundamenta*, from Aphorism 210 to 324 inclusive; in which he has amply explained all his reasons for these alterations; and there were at that time many who saw the justice of his remarks. *Ludwig* says, when speaking of this work—“*rigorosus quidem, sed sæpissime felix botanicorum censor est.*” The work is rendered very applicable to use, by two excellent indexes.

LINNÆUS printed, at the end of this volume, *Discursus de introducenda in scholas et gymnasia Historiæ naturalis lectione*, pp. 24, written by Dr. *Browallius*, who afterwards defended very ably the system of *Linnaeus* against professor *Siegesbeck* of *Petersburgh*.

In 1737 was likewise published the most splendid of all our author's writings, the *Hortus Cliffortianus Plantas exhibens quas in Hortis tam vivis quam siccis, Hartecampi in Hollandia, coluit Vir Nob. et Gen. Georgius Clifford, J. U. D. reductis varietatibus ad species, speciebus ad genera, generibus ad classes, adjectis locis plantarum natalibus, differentiisque specierum.* Amst. 1737, fol. pp. 501, t. 32. As this book was printed at the expence of Mr. *Clifford*, it is ornamented with an elegant frontispiece, and adorned with some of the finest engravings of plants that
are

are extant, the drawings for which were made with all possible accuracy by the late Mr. *Ebret*. By the munificence of Mr. *Clifford*, many of the celebrated botanists received a present of this book. How rich this garden was in plants, the book will testify. They are arranged, as in all our author's succeeding works, in the sexual method; the varieties are reduced to their several species, the natural places of the plants are particularly noticed, many new *genera*, and *species* under former genera, are introduced, with their descriptions at large, and curious observations interspersed throughout the whole. And, what must have been more especially acceptable to those who began to relish our author's system, was, the farther exemplification of his *specific characters*, which the vast number of plants included in this work necessarily led to. Add to this, that from the copious number of synonyms, it is almost a *pinax* of every plant therein mentioned; and on this account, as well as others, will yet retain its value, though superseded in a great degree by the *Species Plantarum*. To the curious and critical botanist also it is no small satisfaction now, to see in this volume, compared with later works, the progress of the author's own knowledge, manifest by the removes and alterations that better information enabled him to make. In the dedication our author enumerates those patrons who have cultivated botanical gardens so greatly to the emolument of the science: he gives a list of the *Cliffortian* library, and annexes two tables, with explanations of all the variety of leaves, according to his new method

of

of defining them. This addition was very necessary, as the number of plants synonymed in this volume amounts to near 2,500. We conclude with *Gesner's* opinion of this work, in a letter to the celebrated *Haller*: "*Opus sane egregium et acerrimi judicii, nec minoris eruditionis, quo diffusculter botanicus carebit. — Mibi perplacet ab eo in nominibus specierum notas earum essentielles exhiberi, quod ante vix quisquam botanicus recte præstitit.*"

The last book which *LINNÆUS* published of his own, during his stay in *Holland*, was the *CLASSES PLANTARUM, seu Systemata Plantarum omnia a fructificatione desumpta, quorum 16 universalia et 13 partialia, compendiosè proposita secundum classes, ordines et nomina generica, cum clave cujusvis methodi et synonymis genericis.* Lugd. Bat. 1738, pp. 656. This work is a very large illustration of the second part of the *Fundamenta*, from aphorism 53 to 78, and contains a compendious and useful view of all the systems of botany, or methods of classing plants, both general and partial, from *Cæsalpinus*, in 1583, who is considered as the inventor, to *LINNÆUS* himself in 1735. To the generical name in every system, he has added that by which it stands in his own, which is a great advantage in the use of this book. A new edition, with the requisite additions, would be very acceptable to the public even now. The systems at large that are displayed in this book, are those of *Cæsalpinus*, *Morison*, *Ray*, *Knaut*, *Herman*, and *Boerhaave*, founded on the fruit: *Rivinus*, *Ruppius*, *Ludwig*, and *Knaut*, on the number of petals in the flower; *Tournefort* and *Pontedera*, on the figure of the
same:

same: and of *Magnol* and LINNÆUS, on the cup of the flower. After these follow LINNÆUS's sexual system, and his fragments of the natural method. We say nothing of the arrangement of particular classes, such are the *composite* flowers, the *umbelliferous* plants, the *graminaceous*, the *ferns*, &c. A very large index, referring to every genus in each system, concludes the volume.

LINNÆUS, whilst in *Holland*, sustained a very severe loss in the premature death of his friend and fellow student *Artedi*; with whom, as has been before observed, he had contracted the firmest friendship whilst they resided at *Upsal*; insomuch that they had, in case of death, mutually bequeathed to each other their manuscripts and collections in natural history. *Artedi* had been particularly assiduous in arranging anew, and describing all such fishes as had fallen under his own inspection; and had taken a voyage to *England* in 1734, to give more perfection to his plan. Our author, after his death, procured, though with some difficulty, all *Artedi*'s papers, and put the finishing hand to them, and published them at *Leyden* in 1738, in octavo, under the title of *Petri Artedi, Sueci Medici, ICHTHYOLOGIA: sive opera omnia de piscibus, scilicet Bibliotheca Ichthyologica; Philosophia Ichthyologica; Genera Piscium; Synonymia Specierum; Descriptiones Specierum. Omnia in hoc genere perfectiora quam antea ulla. Posthumum vindicavit, recognovit, cooptavit, et edidit, Carolus LINNÆUS*. In this work fishes are arranged in an entire new method, and which our author adopted with little or no variation, and continued through

through all the former editions of his *System* to the tenth; when he removed the *cetaceous* order into the class of the *mammalia*; and instead of retaining in the remaining orders the distinctions arising from the *bony* or *cartilaginous* texture of the *fins*; he established them on the *situation* of the *ventral fins*, which he considers as analogous to the feet in other animals, as they are placed either before, underneath, or behind the *pectoral fins*.

In this work *Artedi* has exhibited an instance of genius, labour, and application, that cannot fail to excite the greatest regret at his early death. He has given to *Ichthyology* that degree of perfection, which his friend afterwards extended through all the animal kingdom, and which must remain a lasting monument of his abilities. In particular, his descriptions of the indigenous fishes of *Sweden*, are scientific to a degree that had never before been seen; and we cannot sufficiently admire the pains he must have taken to extricate the synonyms from every author on the subject. *Artedi*, after his return from *England*, was retained, at the recommendation of LINNÆUS, by *Seba* of *Amsterdam*, to complete that part of his *Tbesaurus* relating to fishes, and was unfortunately drowned in one of the canals in that city. LINNÆUS, in a short account of the author's life, has lamented his untimely decease, in a manner which does no less honour to his friend than to his own feelings.

We must now accompany our author into *Sweden*, whither he returned about the latter end of

of the year 1738, or the beginning of the next, and settled as a physician at *Stockholm*, where he seems to have met with considerable opposition, and was oppressed with many difficulties; all of which at length he overcame, and got into extensive practice; and, soon after his settlement, married the lady before spoken of. By the interest of Count *Tessin*, who was afterwards his great patron, and even procured medals to be struck in honour of him, he obtained the rank of physician to the fleet, and a stipend from the citizens for giving lectures in botany. And what at this time especially was highly favourable to the advancement of his character and fame, by giving him an opportunity of displaying his abilities, was the establishment of the *Royal Academy of Sciences at Stockholm*; of which LINNÆUS was constituted the first president, and to which establishment the king granted several privileges, particularly that of free postage to all papers directed to the secretary. By the rules of the academy, the president held his place but three months, at the expiration of which, he made his ORATIO *de memorabilibus in Insectis*, Oct. 3, 1739; in which he endeavours to excite an attention and enquiry into the knowledge of insects, by displaying the many singular *phænomena* that occur in contemplating the nature of those animals, and by pointing out, in a variety of instances, their usefulness to mankind in particular, and to the economy of nature in general.

During all this time, however, LINNÆUS appears to have had his eye upon the botanic and medical chair

chair at *Upsal*, at this time occupied by *Rudbeck*, who was far advanced in life. We learn indeed that he was so intent on pursuing, and perfecting, his great designs in the advancement of his favourite study of nature, that he had determined, if he failed in procuring the professorship at *Upsal*, to accept the offer that had been made to him by *Haller*, of filling the botanic chair at *Göttingen*. However, in course of time, he obtained his wish. In the year 1741, upon the resignation of *Roberg*, he was constituted joint professor of physic, and physician to the king, with *Rosen*, who had been appointed in the preceding year on the death of *Rudbeck*. These two colleagues agreed to divide the medical departments between them; and their choice was confirmed by the university. *Rosen* took anatomy, physiology, pathology, and the therapeutic part. LINNÆUS, natural history, botany *materia medica*, the dietetic part, and the *diagnosis morborum*.

During the interval of his removal from *Stockholm* to *Upsal*, in consequence of this appointment, our professor was deputed by the states of the kingdom, to make a tour to the islands of *Oeland* and *Gotland*, in the *Baltic*, attended by six of the pupils, commissioned to make such enquiries as might tend to improve agriculture, and arts, in the kingdom; to which the *Swedish* nation had for some time paid a particular attention; awakened, as it were, by the desolating wars of *Charles* the XIIth, to extend their commerce, and cultivate the arts of peace. The result of this journey was very successful, and proved fully satisfactory to

the States, and was afterwards communicated to the public.

LINNÆUS, on his return, entered upon the professorship, and pronounced before the university his ORATION *de Peregrinationum intra Patriam necessitate*, Oct. 17, 1741; in which he forcibly displays the usefulness of such excursions, by pointing out to the students that vast field of objects which their country held out to their cultivation; whether in geography, physics, mineralogy, botany, zoology, or economics; and by shewing the benefit that must accrue to themselves and their country as rewards to their diligence. That animated spirit which runs through the whole of this composition, renders it one of the most pleasing and instructive of all our author's productions. That intimate knowledge which LINNÆUS himself had acquired of his own country by his repeated travels (fraught as he was too with every requisite for making useful observations) enabled him to point out with the utmost precision the most proper objects of investigation, in every part of nature; and his love to his country gave a zeal to his wishes, that shewed him on this occasion to great advantage; not to add, the aid arising from that self-congratulation, which he must feel, having just gained, by his late appointment, the summit of his wishes.

The ITER ŒLANDICUM ET GOTLANDICUM, in 8°, pp. 284, were printed at *Stockholm*, in 1745, in the *Swedish* language; as was also the ITER SCANICUM, in 1751, 8°, pp. 435. We cannot help regretting that these *Itinera* have not made

their appearance in the *English*, or some other language besides that of *Sweden*; for though, in a country cultivated like ours, many hints, perhaps, might not be drawn from these volumes, of real importance to agriculture *here*; yet they are so replete with curious and philosophical observations, that they could not fail to be an acceptable present to the public; as the general scope of these volumes is to adapt natural history to economical purposes. In the *Iter Gotblandicum et Oelandicum*, LINNÆUS's instructions were directed principally to these particulars:—He was to endeavour to find some kind of earth proper for making pottery-ware in imitation of the porcelaine of *China*: he was to notice every production of nature that might supersede the necessity of the importation of any article, used either in physic or manufactures: and in fine, he was to have a regard to every part of natural history. In the execution of his plan, however, he went much farther than his commission extended, having interspersed a number of observations relating to the antiquities of these islands, the mechanic arts, to the manners of the people, their fishery, and various other articles. He was, as might reasonably be expected, unsuccessful in the first part of his commission, since the two islands are almost entirely composed of limestone, or coral rocks, which abound in a remarkable degree in the *Baltic*. As a proof of the little attention that had been paid to natural history in *Sweden*, we may observe, that

that our author in this journey discovered above an hundred plants, which before were not known to be indigenous; many of which were such as are used in physic, and in dyeing. He pointed out to the natives several plants of great use in rustic economy, and shewed them the advantage of planting the Sea-reed grass (*Arundo arenaria*) to arrest the sand, and form soil on the shores; to which it is extremely well adapted by the length of the roots. In the ITER ŒLANDICUM there occurs a curious remark in vegetation, confirming the annual increase of the wood in an oak-tree, in which was perfectly distinguished the hard winters of 1578, 1687, and 1709, by the narrowness of the circles in those years. He describes the process for making tar, as practised by these islanders; and further, intersperses many observations relating to mineralogy in general; to iron in particular, with which Sweden abounds; describes the iron mountain *Taberg*, (See *Phil. Transact.* vol. xlix. p. 30.) the alum mines of *Mockleby*; the *Poma chrysellina*, or *aëtites marmoreus*, which illustrates the formation of chrysellals, &c.

In the ITER SCANICUM, performed in 1749, our author treats largely on the culture of marshy grounds; on the useful and noxious herbs, for instance, the *Stakan*, supposed to be the *Phellandrium aquaticum*, or *Water Hemlock*, which it is believed renders horses that eat it paralytic; on the *Gramen Maris*, or *Festuca fluitans*, the seeds of which are so particularly useful in fattening geese; on the *Agaricus muscarius*, &c.

In 1743, on occasion of conferring a degree on Dr. J. Westman, the professor delivered his third ORATION *de Telluris habitabilis incremento*; an elaborate and ingenious defence of that hypothesis, which Sir Isaac Newton, and several other philosophers, have inclined to, "That the proportion of water on the globe of this earth is constantly decreasing." This leads the professor also to discuss the 132d section of the *Philosophia*—*Initio rerum ex omni specie viventium unicum sexus par creatum fuisse suadet ratio*.—The visible recession of the waters of the sea in divers parts of the earth, particularly apparent in the *Baltic*, had inclined the *Swedish* philosophers to this opinion of Sir Isaac Newton's. The position of the *Philosophia*, he thinks naturally deducible from the foregoing hypothesis, and necessarily so from the *Mosaic* history. In solving the difficulties attending the latter part of the hypothesis, he is led by his subject to enter largely into a part of the economy of nature, which renders his discourse highly interesting, independently of all conjectures relating to the main argument: this relates to the various ways in which vegetables are disseminated, and by which they find their way to every part of the globe. To this effect winds, rain, rivers, the sea, animals, &c. are all subservient, as well as the various structure and properties of the seeds themselves; in illustrating which last affair the professor has taken great pains, and constructed tables of the genera, founded on these different properties of the seeds. In the introduction to this oration, our author turns the
attention

attention of his readers to some of the more remarkable discoveries that had lately been made in natural history and philosophy; such were those relating to the *Polype*, *Rattlesnake*, and the *Senega*, &c.; among others also, he mentions a remarkable fact that had been communicated by *Sauvages* of *Montpelier*, respecting the effect of the berries of the *Coriaria myrtifolia*, Spec. pl. 1467 (Myrtle-leaved Sumach) in occasioning instant epilepsy.

The three orations of LINNÆUS are subjoined to the second volume of the *Amœnitates Academicæ*, printed in 1752.

In 1745, the professor published his *FLORA SUECICA exhibens Plantas per Regnum Sueciæ crescentes, systematice cum differentiis specierum, synonymis auctorum, nominibus incolarum, solo locorum, usu Pharmacopœorum*, 8°, Holm. pp. 392, 1745; and again, with many additions, in 1755, pp. 464. The first edition contains 1140 plants. In the second they are increased, by his own, and the discoveries of his pupils, to 1296. No generical characters are introduced into this work, but references made to them as they stand in the *Genera Plantarum*, before spoken of. A number of select *synonyma* is added to his own specific name, under each plant; and not only the *Swedish* names in general, but the *provincial* ones: highly worthy this of imitation in works of this kind, and quite necessary in so extensive a kingdom. Many of the rare plants are described at large, and botanical criticisms added to many others. In the last edition the author has interspersed a great number of

of curious observations relating to the economical and medical uses of the plants; and has particularly noted those that are capable of being applied to the purposes of dyeing. The author moreover never fails to mention *superstic* medicines, which he seems to think, perhaps very justly, have not been attended to by physicians as they deserve. The plan of this work has been a pattern for all succeeding writers of *local catalogues*, more especially those who have followed the *Linnean* system, and has been very little improved by any; perhaps excelled by none. The plants of *Lapland* are all included in this work; and the preface, besides the account of *Swedish* authors on botany, contains a curious division of the several provinces of the kingdom, in respect to their different soils and situation, as adapted to particular plants, specifying under each province the plants found therein.

In 1746 appeared the *FAUNA SUECICA, sistens Animalia Sueciæ Regni: Mammalia, Aves, Amphibia, Pisces, Insecta, Vermes; distributa per classes et ordines, genera et species, &c.* Stockholm 1746, 8°; and again, greatly augmented, in 1761, pp. 556. The first edition contained 1350 subjects, the latter comprehends not less than 2266. Neither in this work are any *classical*, *ordinal*, or *generical* notes given at large. The world had never seen so compendious, and it may be truly said, at the same time, so complete a *zoology* before. Here, as in plants, the author has given to each animal a new specific name, expressive, as far as possible, of its essential character. The *synonyms* are added,

or referred to, from almost every author on the subject, and almost every animal is moreover compendiously described. *Insects* make a very considerable part of this catalogue; near 1700 species, all found in that kingdom, are enumerated, distinguished, and methodized, in a manner entirely new, and which has been adopted by nearly every writer on the subject since. We shall speak more fully of the classification in the abstract intended to be given of the *Systema Naturæ*. A compendious manual of *English Zoology* on this plan, is a work much wanted; though we think it could not fail to enhance its value, if the tables of the genera were prefixed to each class, and the characters to each genus, as in the *System* of our author. Two plates, of some of the rarer birds chiefly, accompany this volume, on which are explained the technical terms used in *ornithology*. The number of each class of animals stands thus:

1. Mammalia - 53	4. Pisces - 77
2. Aves - - - 195	5. Insecta - 1691
3. Amphibia - 25	6. Vermes - 198.

An accident having thrown into the hands of the professor an *Herbarium*, consisting of five large volumes of plants, he discovered that it was the collection of the famous Dr. *Paul Herman*, which had been made in the island of *Zeylon*, by that gentleman, at the expence of the *Dutch East India Company*. This *Herbarium* had been lost for upwards of half a century, until chance threw it into the hands of *M. Gunther*, apothecary to the king of *Denmark*, who sent it to *LINNÆUS*, re-

questing the professor to examine it, and affix the names to the plants of this superb collection. Its great value, as being collected by so eminent a man, induced our author to examine the whole with great attention; and he was thereby enabled to form many new genera, and settle many doubtful species. He published the result of his labour under the title of *FLORA ZEYLANICA, sistens Plantas indicas Zeylonæ Insulæ, quæ olim 1670—1677 lectæ fuere, à Paulo Hermanno Professore Botan. Leydensi; demum post 70 annos ab A. Gunthero orbi reditæ*. Holm. 1747, 8°, pp. 254, tab. 4.

This work is yet of use as a *pinax* of these plants, and as a *Linnean* catalogue of *Burman's Thesaurus Zeylanicus*, published in 1738, and illustrated with the figures of upwards of 200 of these plants. Many of the rare species are described, and a very copious number of synonyms added to several of the *East Indian* plants. The *Herbarium* consisted of about 660 plants, of which the true places in the system are assigned to upwards of 400, and the remainder were too imperfect to admit of distinction. This volume is rendered valuable by a concise history of the progress of botany, from the restoration of learning in the 16th century; a natural history of the island, and its general produce; the life of Dr. *Herman*; a short account of *J. Hartog*, who was sent by Dr. *Sherard* to make collections in this island; and of *Burman's Thesaurus Zeylanicus*. *Linnaeus* authenticates this *Herbarium* to have been *Herman's*, by shewing that the numbers, and

the plants, answer to his *Museum Zeylanicum*, published in 1717.

We now see LINNÆUS fixed in the situation that was so well adapted to his character, his taste, and abilities, and which seems to have been the object of his ambition, and center of his hopes. Soon after his establishment, he laboured to get the Academical Garden, which had been founded in 1657, put on a better footing, and very soon effected it; procuring also a house to be built for the residence of the professor. The whole had been in ruin ever since the fire in 1702, and at the time *Linnaeus* was appointed professor of botany, the garden did not contain above 50 plants that were exotic. His correspondence with the first botanists in *Europe*, soon supplied him with great variety. He received *Indian* plants from *Jussieu* of *Paris*, and from *Van Royen* of *Leyden*; *European* plants from *Haller* and *Ludwig*; *American* plants from the late Mr. *Collinson*, Mr. *Carestry*, and others; and variety of annuals from *Dillenius*; in short, how much the garden owed to his diligence and care, in a few years, may be seen by the catalogue published under the title of *HORTUS UPSALIENSIS exhibens Plantas exoticas horto Upsaliensis Academiae a se (Linnaeo) illatas ab anno 1742, in annum 1748, additis, differentiis synonymis, habitationibus, hospitibus, rariorumque descriptionibus, in gratiam studiosae juventutis*. Holm. 1748, 8°, pp. 306, tab. 3. By this catalogue it appears that the professor had introduced 1100 species, exclusive of all the *Swedish* plants, and of varieties; which latter, in ordinary gardens, amount not unfrequently to

to one third of the whole number. The preface contains a curious history of the climate at *Upsal*, and the progress of the seasons through the whole year. From these observations we learn, that the greatest degree of heat, in the summer of 1747, at *Upsal*, was on the second day of *July*, when *Celsius's* thermometer stood at 30 degrees above 0; that the greatest degree of cold, on the 25th of *January* 1740, was 28 degrees below 0. In this thermometer the freezing point is 0, and boiling water 100. From seven years observations on the *leafing* of the oak, it was found never to push before the 6th of *May*, or to be retarded beyond the 22d.

About this period it was, that LINNÆUS made a remarkable discovery, relating to the generation of pearls in the river *Pearl-Muscle* (*Mya Margaritifera*, Syft. 1112.) This shell-fish must not be confounded with what is called the *Mother of Pearl Shell*, as that belongs to another genus, is a sea-shell, and an inhabitant of the warmer countries only. The shell-fish in question is found in rivers, in all the northern parts of the world; in *Norway* and *Sweden* it abounds; it is found in the rivers of the county of *Tyrone* in *Ireland*, and in those of *Donegal*; in *Scotland*, the *Don* is said to abound with it; and it is not unfrequent in the rivers of *England*. This fish will bear removal remarkably well; and it is said, that in some places they form reservoirs for the purpose of keeping it, and taking out the pearl, which, in a certain period of time, will be again renewed. From observations on the growth of these shells, and the number

ber of their annular *laminae*, or scales, it is supposed the fish will attain a very great age; 50 or 60 years are imagined to be a moderate computation. The discovery turned on a method, which LINNÆUS found, of putting these muscles into a state of producing pearls at his pleasure; though the final effect did not take place for several years: he says, that in 5 or 6 years after the operation the pearl would have acquired the size of a *Vetch*. We are unacquainted with the means by which he accomplished this extraordinary operation, but it was probably published at the time, and considered as important, since it is certain that the author was rewarded with a munificent *premium*, from the States of the kingdom, on this account. We regret that we cannot speak more fully on this head; but may observe, that it is probable, from a paper published many years afterwards in the *Berlin Acts*, that the method consisted in injuring the shell externally, perhaps by a perforation; as it has been observed, that these concretions in shell-fish are found on the inside, exactly opposite to perforations and injuries made from without by *serpulae*, and other animals.

From the time that LINNÆUS and ROSEN were appointed professors at *Upsal*, it should seem that the credit of that university, as a school of physic, had been increasing; and the fact indeed is certain, that numbers of students resorted thither from *Germany*, attracted by the character of these two able men: and certainly in *Sweden* itself, many young men were invited to
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the study of physic, by the excellent manner in which it was taught, who otherwise would have engaged in different pursuits. We must not deviate into the line of *Rosen's* department: suffice it to say, that these two eminent men, by their united zeal and abilities, failed not to exalt, together with their own fame, that of their university. LINNÆUS, in teaching the *diagnosis morborum*, had adopted the plan, with some alteration, of M. *Sauvages's* Nosology, of which we shall be led to give some account hereafter. In the year 1749, he published, for the use of his students, *MATERIA MEDICA, Liber I. de Plantis digestus secundum genera, loca, nomina, qualitates, vires, differentias, durationes, simplicia, modos, usus, synonyma, culturas, preparata, potentias, composita*. Holm, 1749, 8°, pp. 252. The compendious method in which this work is executed, and the several useful preliminary papers annexed, render it a very useful and instructive manual to students in medicine. A *materia medica* of the vegetable kingdom, in which every simple was ascertained by so able a botanist as LINNÆUS, was a very considerable acquisition to science. In this volume are arranged 535 subjects, and several are for the first time reduced to their proper genera; such are the *Ipecacuanha*, *Pareira brava*, *Coculi Indici*, and others. The method pursued in this volume is as follows. The author gives,

1. His own specific character of the plant.
2. *C. Baubine's* synonym: or, if the plant was unknown to him, that of the first discoverer.
3. The country where it is produced. In

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the same line is expressed, by a single epithet, whether it be an *herb*, *shrub*, or *tree*: whether it be *annual*, *biennial*, or *perennial*: also, whether it be *indigenous*; or if not, whether it thrives well by common cultivation in gardens, or requires defence from the cold of the winter in *Sweden*; or whether it will not endure that climate.

4. The *Swedish* officinal name, what part is in use, or what preparation of it, if any; and the doses of each.

5. The *sensible* quality of the plant; whether *bitter*, *aromatic*, *acid*, *astringent*, &c.; whether *fragrant*, *fætid*, or *inodorous*; whether *gummy*, *resinous*, or *milky*. Its reputed quality; whether *uncertain*, *well-known*, and *approved*; or whether to be cautiously used. Whether chiefly used in *physic*, or for *culinary* purposes.

6. Its reputed effects on the human body, whether *purging*, *emetic*, *diuretic*, &c.

7. The diseases in which it is most frequently prescribed.

8. The compound medicines into which it enters in the *Swedish* dispensatory.

At the end of the volume is an *index morborum*, with the simples appropriated to each: and an *index virium*, adapted to a preceding classification, founded on their qualities or effects, either on the solids or fluids of the human body.

In the year 1749 was published the first volume of a collection of *Theses* in 8°, under the title of *Amoenitates Academicæ, seu Dissertationes variæ, physiciæ, medicæ, et botanicæ*. This publication has been

been continued, from time to time, to the completion of the seventh volume in the year 1769. *Holm.* These volumes, as soon as published, were constantly reprinted in *Germany* and *Holland.* As these academical dissertations were sustained under LINNÆUS in his professorial character, and were selected by himself, they have been regarded as of equal authority nearly with his own writings; and many of them do in a particular manner extend and exemplify divers parts of his works, the subjects having been pointed out by himself, in many instances, for that purpose. For these reasons we shall, in the course of this volume, give a very brief account of the purport of each dissertation, since they contain a great variety of curious intelligence on the subjects of phylic and natural history, every where digested in the most scientific taste.

Whilst LINNÆUS was meditating one of his capital performances, which had long been expected, and greatly wished for, he was interrupted by a very long and painful fit of the gout, which left him in a very weak and dispirited state; and, according to the intelligence that his friends gave of him, nothing was thought to have contributed more to the restoration of his spirits, than the seasonable acquisition, at this juncture, of a collection of rare and undescribed plants.

Upon the recovery of his health, he published his book; *PHILOSOPHIA BOTANICA in qua explicantur fundamenta botanica cum definitionibus partium, exemplis terminorum, observationibus rariorum, adjectis*

jectis figuris æneis. Stockh. et Amst. 1751, 8°, pp. 362, tab. 11. This must be considered as the institutions of the *Linnean* system of botany, and is a work which none, who wish to be acquainted with the sexual system, can be without, as it is the author's own comment on his *Fundamenta*, first published in 1736, and which are comprized in 365 aphorisms, divided into 12 chapters. The author's original intention was to have explained all these aphorisms at large, in the manner that had been done in the *Bibliotheca Botanica*, *Classes Plantarum*, *Sponsalia Plantarum*, *Critica Botanica*, and *Vires Plantarum*; but he says his numerous avocations did not allow him requisite time.

Ch. 1. Exhibits a systematical distribution of the principal botanical writers, and is that part which is treated of at large in the *Bibliotheca*.

Ch. 2. *Syffemata*. A view of all the botanical systems, being a compend of the *Classes Plantarum*, but here brought down somewhat later, so as to comprehend the general view of *Van Royen's*, *Haller's*, and *Wachendorf's*.

Ch. 3. *Plantæ*. Explains the terms used in describing the different kinds of roots, stalks, and leaves of plants.

Ch. 4. *Fructificatio*. Describes the parts of fructification, and defines all the terms used respecting their number, figure, proportion, situation, and uses.

Ch. 5. Relates to the sexes of plants, a subject which is more copiously treated in a paper called *Sponsalia Plantarum*, printed in the first volume of the *Amenitates Academicæ*.

Ch. 6.

Ch. 6. *Characteris.* Rules and definitions for establishing the characters of *classes*, *orders*, and *genera*.

Ch. 7. *Nomina.* Rules for rightly forming *generic* names, and those of *orders* and *classes*.

Ch. 8. *Differentiæ.* Rules for establishing the *specific* characters of plants.

Ch. 9. *Varietates.* Rules for distinguishing varieties among plants.

Ch. 10. *Synonyma.* Rules relating to the right disposition of *synonymical* names in botanic writings.

The four chapters last mentioned make the subject of the CRITICA BOTANICA, in which work every aphorism is much more largely explained than in the present.

Ch. 11. *Adumbrationes.* Rules for properly describing and naming the *species*, and for giving their complete history in a scientific manner.

Ch. 12. *Vires.* Relates to the virtues of plants, as deducible from their agreement in their characters, as of the same *genus*, the same *natural order*, or *class*. The subject of this chapter is treated in a more comprehensive manner in the *Vires Plantarum*, printed in the first volume of *Amœnitates Academicæ*. To give a few instances however as illustrations:—The Scammony, Mechocacan, Turbith, and Sea Bindweed, are all *species* of the genus *Convolvulus*, and all agree in possessing a purgative quality. The Mallow, Marsh-mallow, and Cotton-bush, are so many distinct *genera*, under a natural order, called *columniferous*, and agree in being all mucilaginous.

Of the *umbelliferous* plants, such as grow in *dry* places are aromatic, and considered as sudorifics and carminatives: those growing in *watery* places, on the contrary, are mostly of a quality to be justly suspected, and not a few of them quite *noxious*. Plants of the *papilionaceous* class are all excellent food for cattle. The *syngenesious*, commonly *bitters*. The *coniferous* class, all evergreens and *resinous*, are considered as diuretics.

Ten explanatory plates are added to this volume, on which are described the different leaves, and their situations on the stalk, &c. different stalks, roots, flowers, &c. The first part of these plates, relating to the leaves, had been given introductory to the *Hortus Cliffortianus*. Some new terms in botany, which have been invented since the publication of the *Philosophia*, may be found in a paper under the title of *Termini Botanici*, in the 6th volume of the *Amenitates*.

In this work of LINNÆUS it is difficult to determine, whether we ought most to admire the genius of its author in his inventive power, or that exquisite scientific arrangement which he has given to the whole; and which, both together, constitute this a most excellent performance.

At the end of the volume we meet with several curious fragments: such are,

1. Directions to botanic pupils.
2. The method of constructing an *herbarium*.
3. Method of conducting botanical excursions.
4. Method of laying out a botanic garden.
5. Plan for naturalists in travelling and con-

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structing their journal; with an enumeration of all those subjects that demand their attention.

6. Idea of a compleat botanist. Some of the principal botanists are here enumerated.

7. A compend of the philosophy of vegetation.

In 1753, appeared the Professor's "*Opus maximum et æternum*," the SPECIES PLANTARUM exhibentes Plantas rite cognitās, ad genera relatas, cum differentiis specificis, nominibus trivialibus, synonymis selectis, locis natalibus, secundum systema sexuale digestas. Tom. II. Holm. 8°, 1753, pp. 1200; and a second time in 1762, pp. 1684. To give this work its utmost perfection, had been the author's object for many years, and to this all his other botanic productions are in some measure only preparatory; especially the *local* catalogues; as the rightly ascertaining the *species* is the great object of all method. In this work *Linneus* takes in every plant that had come sufficiently under his *own* inspection; seldom admitting any on the authority of others; and wheresoever he has done it, the plant is distinguished by a proper mark. The plan of this work is, in general, agreeable to that of all his other local catalogues; no other part of the system being exemplified except the *species*: and as it is entirely botanical, none of the uses of the plants are here introduced. Every plant has its *specific* name, constructed according to the rules established in the eighth part of the *Philosophia Botanica*, with a reference to all, or any of his own works, in which it has been mentioned before;

fore; and the synonym is given, if it be different from the present. Then follow the synonyms of the best authors, and constantly, where the plant is at all rare, or newly-discovered, there is a reference to the best figures. The country in which the plant grows is then added, and frequently a symbol, expressive of its duration, whether annual, biennial, or perennial.

In this work, for the first time, the professor has given to each plant, what he calls a *trivial* name: that is, a single epithet, which may be expressive, as far as possible, of the *essential specific* difference, among the species of the genus: this, however, can take place but rarely; in other instances it is expressive of some, the most striking and obvious difference; and not seldom it is a local term; or the name of the first discoverer. The latter method, could it have taken place, would have had the advantage of conveying, somewhat like a chronological history of each plant, and at the same time perpetuating due credit to the discoverer. These *trivial* names are printed in the margin, to catch the eye instantly, which is a great advantage. The invention of trivial names, the hint of which was probably borrowed from *Rivini*, by assisting the memory, has much promoted the knowledge of plants, and must be considered as a capital improvement. Their use in speaking of plants, and forming compendious catalogues, has been acknowledged by every botanist since the introduction of them.

In the preface the author gives an ample account of the assistances he received, and of the

pains he had taken, to bring this work to its present state. To this end, he specifies, the countries he had travelled over; the many botanic gardens he had visited; the various excellent *herbaria* that he had examined, in *Sweden*, *Holland*, *England*, and *France*; the names of his pupils educated under him, and their various peregrinations; from all which he reaped great advantages, as from these he received various new plants: and, finally, he acknowledges the many liberal communications of seeds and specimens, sent to him from all parts of the world by the first botanists of the time.

As this work contains all the plants of the known world which had come to *Linnaeus's* knowledge, or rather inspection; which, at the publication of these volumes, appear to have amounted to about 7,300 species, all varieties excluded, the professed botanist has only to regret, that it could not have been extended by the author himself, to a compleat *pinax*, and *history* of every plant therein described.

In this year also LINNÆUS published MUSEUM TESSINIANUM, *opera Ill. Comitiss C. G. TESSIN, Regis Regnique Senatoris, &c. &c. collectum.* Holm. 1753, fol. pp. 90. tab. 12. This is a description of the cabinet of LINNÆUS's first patron and great friend *Count Tessin*, at that time preceptor to the Prince Royal, now King of *Sweden*, who had spared no expence in collecting a rich museum, principally consisting of subjects in mineralogy, and particularly abounding in fossils of the figured or extraneous kind. The work is in *Swedish* and *Latin*,
and

and the tables represent several scarce and very valuable *figured fossils*, not to be seen elsewhere.

The petrifications or figured fossils in this work, are arranged in four orders, founded on the different modes of the formation of them.

1. *Fossilia*, commonly so called; shells, corals, animal remains, unchanged, except by being deprived more or less of the connecting animal gluten.

2. *Redintegrata*. Earthy, stony, or chrystalline fossils, formed within any crustaceous or testaceous body, as in a mould; thus retaining the cast, without the external coat.

3. *Impressa*. Impressions only: as of fishes and capillary plants, or ferns, &c.

4. *Transubstantiata*. Perfect petrifications, in which the original organic parts are perfectly filled up with stony particles, and retaining the exact structure, externally and internally, of the original body.

In 1754 was published *MUSEUM REGIS ADOLPHI Suecorum, &c. in quo Animalia rariora, imprimis et exotica Quadrupedia, Aves, Amphibia, Pisces, Insecta, Vermes describuntur et determinantur, Latine et Suecice*. Fol. 1754, pp. 135. tab. 33. This splendid volume is frequently referred to by our author in his *Systema*, on account of the figures of so many of the rarer serpents, and fishes, here engraven. Of the former there are 48 species, and of the latter 32; specimens of which are all preserved in spirits in the royal museum, in the palace of *Ulrichsdahl*.

The same which our author had now acquired

by his *Systema Naturæ*, of which a sixth edition, much enlarged, had been published at *Stockholm*, in 1748, in 8°, pp. 232, with eight tables, explanatory of the classes and orders; and which was also republished by *Gronovius* at *Leyden*; had brought, as it were, a conflux of every thing rare and valuable in every branch of nature, from all parts of the globe, into *Sweden*. The king and queen of *Sweden* had their separate collections of rarities; the former at *Ulrichsdahl*, as hath just been mentioned; the latter, very rich in exotic insects and shells, procured at a great expence, at the palace of *Drottningholm*. These our author was employed in arranging and describing. Besides these, the *museum* of the royal academy of *Upsal* had been augmented by a considerable donation from the king, whilst hereditary prince, in 1746; by another, from Count *Gyllenborg*, the year before; by a third, from *M. Grill*, an opulent citizen of *Stockholm*. The contents of these three collections are given in the first volume of the *Amanitates Academicæ*. We mention them here only to shew that *LINNÆUS* now began to enjoy ample resources in every branch of natural history at home; besides that many ingenious men, who had been educated under him, were now dispersed into various quarters of the globe; and that from their letters he received great intelligence and satisfaction. Seeds and specimens of plants were sent him from *Siberia*, by *Gmelin*; from *America*, by Dr. *Mitchel* and Governor *Coldingham*; from *England*, by Mr. *Collinson*; Mr. *Ellis*; as also from his friends in *Holland*, and various other parts of

of *Europe*. And thus it will be seen, that he began scarcely to feel the disadvantages of his northern situation.

We shall now also begin to see the professor in a more elevated rank and situation in life. His reputation had already procured him honours from almost all the Royal Societies in *Europe*. Into the *Imperial Academy*, he had been [very early received, and distinguished, according to the custom of that institution, with a classic name, having most aptly been called *DIOSCORIDES secundus*: and in the year 1753 he received this honour from the Royal Society of *London*; and his own sovereign, truly sensible of his merit, and greatly esteeming his character and abilities, favoured him with a mark of his distinction and regard, by creating him a KNIGHT of the POLAR STAR. It was now no longer *Laudatur et alget*. His emoluments kept pace with his fame and honours; his practice in his profession became lucrative, and we find him soon after possessed of his country house and gardens at *Hammarby*, about five miles from *Upsal*. He had moreover received one of the most flattering testimonies of the extent and magnitude of his fame, that perhaps was ever shewn to any literary character, the state of the nation which conferred it, with all its circumstances, duly considered. This was an invitation to *Madrid*, from the king of *Spain*, there to preside as a naturalist, with the offer of an annual pension for life of 2000 pistoles, letters of nobility, and the perfect free exercise of his own religion. An offer not readily paralleled in the history of modern

times! That he did not accept of it is certain, having, after the most perfect acknowledgments of the singular honour done him, returned for answer, "that, if he had any merits, they were due to his own country."

In the year 1755, the Royal Academy of Sciences at *Stockholm* honoured our professor with one of the first premiums, agreeably to the will of Count *Sparre*; who had decreed two gold medals, of ten ducats value each, to be annually given by the academy, to the authors of such papers, in the preceding year's *Stockholm Acts*, as should be adjudged most useful in promoting agriculture particularly, and all branches of rural œconomy. This medal bore on one side, the arms of the Count, with this motto—*Superstes in Scientiis amor* FREDERICI SPARRE.—LINNÆUS obtained it in consequence of a paper *de Plantis, quæ Alpium Succicarum indigenæ, magno rei œconomicæ et medicæ emolumento fieri possint*, and the ultimate intention was to recommend these plants, as adapted to culture in *Lapland*. This paper was inserted in the *Stockholm Acts* for 1754. Vol. XV.

LINNÆUS also obtained the *præmium centum aureorum*, proposed by the Imperial Academy of Sciences at *Petersburgh*, for the best paper written to establish, or disprove, by new arguments, the doctrine of the sexes of plants. On this occasion the professor wrote his *DISQUISITIO de questione ab Acad. Imper. Scient. Petrop. in annum 1759 pro præmia proposita: SEXUM PLANTARUM argumentis et experimentis novis, præter adhuc jam cognita, vel corroborare vel impugnare, præmissa expositione historica et physica omnium*

omnium Plantæ partium, quæ aliquid ad fecundationem et perfectionem seminis, et fructus conferre creduntur; ab eadem Academia die 6 Sept. 1760, in conventu publico præmio ornata. Petrop. 1760, 4^{to}, pp. 32.

Apart from all foregoing arguments, facts, and experiments, brought in support of this question, the professor has in this little tract sufficiently proved, by a series of *new* facts, that the dust of the *Antberæ*, analogically called the male parts, is absolutely necessary to be shed on the *stigma* or female part, in order to render the seed fertile. His theory of vegetation, prefixed to this paper, is explained more at large in the *Prolepsis Plantarum*, printed in the 6th volume of the *Amœnitates*.

It was, if possible, an additional glory to LINNÆUS to have merited this premium from the *Petersburgh* academy; inasmuch as a professor of that society, a few years before, had with more than common zeal, although with a facility like that of the other antagonists of our author, endeavoured to overturn the whole *Linnean* system of botany, by attempting to shew that the doctrine of the sexes of plants, had no foundation in nature, and was unsupported by facts and experiments.

The great character of LINNÆUS, and that of his colleagues, particularly of *Rosen*, in the medical departments, and their united endeavours, had very considerably raised the credit of the university of *Upsal*, as we have before observed. It is certain, that the number of students are, at this time, nearly double what they are said to have been in accounts written 30 and

40 years

40 years ago. The emulation excited among the students amply rewarded those gentlemen for their pains, by the vast harvest of useful information flowing in, particularly on the subjects of natural history, from their pupils, now dispersed in every part of the world. Many of these young men, after being properly grounded in the principles of physic, had, with an ardour which nothing but the strongest love of science could inspire, voluntarily undertaken the most distant and perilous voyages, supported by the munificence of particular patrons or societies, to gratify their taste in the pursuits of natural history, and other useful knowledge. Several of these young men perished, from change of climate, or various other causes, and much of the fruit of their labour was lost with them. Such was the fate of *Ternström*, at *Pulicandor*, in 1745; of *Hasselquist*, who went into *Ægypt* and *Palestine*, and died at *Smyrna*, in 1752; of *Loefling*, who died in *Cumana*, in 1756. Of the first of these we have no remains. The papers of *Hasselquist* were redeemed by the queen of *Sweden*, and published by LINNÆUS, under the title of *ITER PALÆSTINUM*, in 1757, in 8°; and those of *Loefling*, under the title of *ITER HISPANICUM*, in 1758; to each of which is prefixed a short account of the author. We have also the fruit of *Kalm's* journey in *N. America*, and of the voyage of *Osbeck* and *Toren*, who both went chaplains to *Swedish East India* ships. These are here mentioned particularly, as they are all translated, and published since in the *English* language. We yet deplore the more recent fate of *Forsskal*, and his
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unfortunate associates, in *Arabia*, and the more so, since his posthumous pieces, published at *Copenhagen* in 1775, are sufficient to convince us, that the fruit of that expedition would have been rich and large, had it not been so unfortunately blasted.

There were also several others, who made less remote journies for the same purpose; such were *L. Montin*, who visited *Lula-Lapmark* in 1749; *M. Kæbler*, who travelled into the southern part of *Italy* in 1752; *Dr. Solander*, who visited *Pitbo-Lapmark*, and *Torno-Lapmark*, in 1753, where he made several discoveries, and brought back divers rare plants, and other subjects in natural history, which had escaped the diligence of his great master; *D. Rolander*, who visited *Surinam* and *St. Eustatia*, in 1755; *A. R. Martin*, who searched *Greenland* in 1758, as *C. Alstroëmer* did the southern parts of *Europe* in 1760. We do not mention others, who re-visited the isle of *Gotbland* in 1752 and 1760, after *Linneus's* own tour into that place.

The travels of these gentlemen afforded great sources of information, and furnished materials for our author, that proved very favourable to the last editions of his *Systema Naturæ*, and *Species Plantarum*: infomuch, that we shall see him exemplifying, in a much more perfect and detailed manner, his *System of Nature*.

This work, as far as respected the vegetable kingdom, had been separately and largely exhibited, as before mentioned, in the *Genera Plantarum*, and the *species* given in the several *Floræ* of
our

our author, and finally in the *Species Plantarum*. As yet, however, although it had passed through nine editions, little more had appeared in the *animal* kingdom than the generical characters, with a single specific name; inasmuch that the ninth edition at *Leyden*, in 1756, was contained in a small octavo of 226 pages. This it must be observed notwithstanding, was only a republication of the author's sixth edition in 1748. The scheme therefore cannot be considered as perfected by the author, until the publication of the 10th edition, in 1758, the first part of which, relating to the animal kingdom, makes a volume of 821 pages; and the same part, in the 12th and last edition, is augmented by the addition of new subjects to 1327 pages. This work therefore, published in two volumes at *Stockholm*, in 1766 and 1767, is to be considered as having received the author's finishing hand, as far as possible, since he professes to describe only such *animals* as had fallen under his own inspection, except in some instances, where his dependence upon other authority rendered it justifiable. The title of this enlarged edition runs thus:

SYSTEMA NATURÆ per regna tria Naturæ secundum classes, ordines, genera et species, cum characteribus, differentiis, synonymis, locis. Holm. 1766, I, 1767, II. 1768, III.

TOM. I. The ANIMAL KINGDOM.

In this volume, after a philosophical history of the animal kingdom in general, our author proceeds to the establishment of the classical characters;

ractions; previous to which, he presents us with the *natural* division of animals, arising from their different *internal structure*; an arrangement partly established by *Aristotle*, and of which our own great naturalist Mr. RAY has made considerable use, in the introductory part of his *Synopsis Animalium*. By this division all the animal kingdom naturally falls into six classes, as follow: animals having the

HEART furnished with	
Two ventricles and	{ Viviparous. MAMMALIA.
auricles: — —	
Blood warm and red.	{ Oviparous. BIRDS.
One ventricle and	{ Respiration } AMPHIBIA.
auricle: — —	
Blood cold and red.	{ Breathing by Gills. FISHES.
One ventricle, with-	{ Antennated. INSECTS.
out auricle: — —	
Senses, cold and colourless.	{ Tentaculated. VERMES.

He then gives the *natural* characters at large of each class, taking in with the foregoing internal structure, all the differences arising from the *lungs*, or other organs of respiration, as *gills*: from the *maxille*, jaws or mandibles: the organs of *generation*: those of *sensation*: the *teguments*, or outward covering: and the *fulera*, or legs, wings, &c. Our plan does not admit of introducing these at large.

At the head of each class is given a concise and most instructive *description* of the *classical* character; so methodically constructed, as to include at the same time an explanation of all the *terms* appertaining

appertaining to that class, concluding with a general mention of the best authors thereon.

After this, our author proceeds to the establishment of the *natural* characters of each *order* of the class respectively. These also we must omit, as inconsistent with our compendious view of the system, and more especially the latter classes of this kingdom, where the subjects are so numerous: but in the four first classes we propose to give the *artificial* generical characters as they stand at the head of each order.

Class I. MAMMALIA.

This class comprehends not only all the animals which we call *Quadrupeds* (the *Lizard* genus, or rather the *reptiles Pedati*, excepted) but also the *cetaceous* order, or Whales, Cachalots, and Porpoisses. This arrangement of Whales with Quadrupeds, which did not take place in the first editions of this work, has not been relished by some very respectable Zoologists who wrote before LINNÆUS; but our author thinks himself fully justified on account of the agreement of these animals in the *structure of the heart*, in the respiration by means of *lungs*, in their having *moveable eyelids*, *ears*, in being *viviparous*, in being furnished with *teats*, and in other particulars, by which they differ so materially from *fishes*, as to more than balance that single agreement in living in the same *element*.

The MAMMALIA are divided by our author into *seven orders*; the distinctions of which are, in this *artificial* arrangement, principally established on the

the difference in the *number*, situation, and form, of the three kinds of teeth, namely, the *primores* or *incisores*, called *fore-teeth*, or *cutting* teeth; the *laniarii* or *canini*, called dog-teeth, *canine*, or lacerating teeth; and the *molares*, double teeth or *grinders*. LINNÆUS, notwithstanding, does not entirely neglect the *feet*, as will appear from his description of the *natural* characters of the *orders*, as well as from the following *systematic* arrangement, of this class.

1. *Digitated.*

Fore-teeth, none	—	BRUTA.	2.
Fore-teeth, two. Canine none		GLIRES.	4.
Fore-teeth, four. Canine single		PRIMATES.	1.
Fore-teeth, 6, 2, 10. conical.	}	FERÆ.	3.
Canine single			

2. *Hoofed.*

Fore-teeth, above and below	-	BELLUÆ.	6.
Fore-teeth, none above	—	PECORA.	5.

3. *Destitute of hoofs or claws.*

Teeth, various; in the different genera	—	—	}	CETE.	7.

We shall give the *characters* as they stand at the head of each *ORDER*; and then enumerate the *genera*, adding to the latter only the abbreviated characters.

I. PRIMATES. Animals furnished with fore-teeth, or cutting teeth: four above; parallel. Two pectoral teats.

II. BRUTA. No fore-teeth.

III. FERÆ. Six, sharp fore-teeth in the upper jaw. One canine tooth on each side.

There are exceptions in this order. The *Delphis*

delphis hath 17. The *Sorex* hath 19. And the *Erinaceus* 20.

IV. GLIRES. Two fore-teeth in each jaw, close together; but remote from the grinders. No canine teeth.

V. PECORA. No fore-teeth in the upper jaw: six or eight in the lower jaw, very remote from the grinders. Hoofed feet: inguinal teats.

VI. BELLUA. Fore-teeth truncated. Hoofed feet.

VII. CETE. Breathing apertures on the head. Pectoral fins. Tail placed horizontally. No claws.

Abbreviated *generic* characters.

I. PRIMATES.

Howsoever the pride of man may be offended at the idea of being ranked with the beasts that perish, he nevertheless stands as *an animal*, in the system of nature, at the head of this *order*; and as such is here described, with his several varieties observable in the different quarters of the globe, in a manner, and with an accuracy, peculiar to our author, and which we may venture to say, is nowhere else to be met with. But man is not left by LINNÆUS, to contemplate himself merely as such, but he is led to the consideration of what he ought to be, as an *intelligent and moral being*, in a comment on the Grecian Sage's dictate, KNOW THYSELF: by the true application of which, he cannot but be sufficiently elevated above every humiliating idea which can otherwise arise from such an association.

2. SIMIA

2. **SIMIA.** *Ape.* Canine teeth, separate.
33 species.
a. Without tails. *True Apes.* 3;
b. With short tails. *Baboons.* 6.
c. With long tails. *Monkeys.* 24:
3. **LEMUR.** *Maucauco.* Fore-teeth below 6.
5 species. *Mongoz, Black Maucauco, Ringtailed M. &c.*
4. **VESPERTILIO.** *Bat.* Fore-toes elongated, and connected by membranes, performing the office of wings.
Vampyre, Common Bat, Long-eared, &c. 6 species.

II. BRUTA.

5. **ELEPHAS.** *Elephant.* Tusks and grinders only: long proboscis.
6. **TRICHECHUS,** *Walrus.* Tusks above only; grinders formed of a rugged bony substance; hinder feet formed into fins.
The Morfe, the Manati.
7. **BRADYPUS.** *Sloth.* Grinders only; first grinders long; body hairy.
2 species.
8. **MYRMECOPHAGA.** *Ant-eater.* No teeth; body hairy.
4 species.
9. **MANIS.** *Manis.* No teeth; body scaly.
2 species.
- F
10. **DASYPUS,**

10. **DASYPUS. Armadillo.** Grinders only; body
crustaceous.

6 species.

III. F E R Æ

11. **PHOCA. Seal.** Fore-teeth above 6; below 4.
3 species. *Ursine, Leonine, Com-*
mon.

12. **CANIS. Dog.** Fore-teeth 6; and 6: middle
ones above; lobated.
Faithful, with all its varieties.
Wolf, Hyæna, Fox, Arctic Fox,
Jackal, &c. 9 species.

13. **FELIS. Cat.** Fore-teeth 6; and 6: lower ones,
equal: tongue very
rough.
Lion, Tyger, Panther, Cat, Lynx,
&c. 7 species.

14. **VIVERRA. Civet.** Fore-teeth 6; and 6: mid-
dle ones below short.
6 species. *Ichnneumon or Mungo,*
Coati Mondî, Civet, Genet, &c.

15. **MUSTELA. Weasel.** Fore-teeth 6; and 6:
lower ones close toge-
ther; 2 placed inwards.
Sea-Otter, Otter, Lesser Otter,
the Glutton, Martin, Polo-cat,
Ferret, Sable, Stoat, or Er-
mine. "The Glutton is
"thought by Mr. Pennant
"to be the same animal with
"the *Ursus Luscus*, or Quick-
"hatch,

hatch, of *Linnaeus*. 11
species.

16. **URSUS, Bear.** Fore-teeth 6; and 6: upper
ones hollowed.

*Black Bear, White Bear, Badger,
Raccoon, Quick-hatch or Wol-
verene, (the same animal called
Glutton.)*

17. **DIDELPHIS, Opossum.** Fore-teeth above 10;
below, 8.

*Virginian, Philander, Seba's Mu-
rine, Dorfigerous.*

18. **TALPA, Mole.** Fore-teeth 6 above; 8 below:
2 species.

19. **SOREX, Shrew.** Fore-teeth 2 above; 4 be-
low.

*Crested, Minute, the least of all
quadrupeds; weighs 1 drachm.*

*Water, Murine, Fætid or com-
mon.*

20. **ERINACEUS, Hedgehog.** Fore teeth 2 above,
2 below.

Common, American, Asiatic.

IV. GLIRES.

21. **HYSTRIX, Porcupine.** Body covered with
quills.

Canada, Long-tailed.

22. **LEPUS, Hare.** Fore-teeth above, double:

*Common Rabbit, Cape Rabbit,
Brazilian Rabbit.*

23. **CASTOR. Beaver.** Fore-teeth above truncated, and hollowed.

Common, Musk, Zibet.

24. **MUS. Rat.** Fore-teeth above subulated.

21 species. *Cavy, called Guinea Pig, Aguti, Javan, Earless, Lemming, Marmot, Earth Rat, Water R. Common R. Mouse, Dormouse, Jerbua, &c.*

25. **SCIURUS. Squirrel.** Fore-teeth above, cuneated; below, compressed.

Common, Black, Grey, Palm, Striated, Glis, Flying, Java, Flying Cat. 11 species.

26. **NOCTILIO. Noctule.** Fore-teeth, below bilobated; fore-toes elongated, and connected by membranes, performing the office of wings.

American. 1 species.

V. PECORA.

27. **CAMELUS. Camel.** No horns; several canine teeth on each side.

Camel, Bactrian or Dromedary, Glama, Pacas.

28. **MOSCHUS. Musk.** No horns; canine teeth single on each side; upper ones standing out of the mouth.

Tibet Musk, Guinea Musk, an Antelope of Mr. Pennant, Pigmy Musk.

29. **CERVUS,**

29. CERVUS. *Deer.* Horns solid, branched, deciduous; no canine teeth.

Camelopard, Elk, Stag, Rein Deer, Buck, Roebuck, Guinea.

30. CAPRA. *Goat.* Horns hollow, erect; no canine teeth.

Tame Goat, Wild Goat, Chamois, Rock Goat, Gazell, Egyptian Antelope of Mr. Pennant, Common Antelope, Bezoar, Dorcas, Ammon, &c. 12 species.

31. OVIS. *Sheep.* Horns hollow, bending backwards; no canine teeth.

Ram and its varieties; Guinea, Cretan; these two are also varieties, according to Mr. Pennant.

32. BOS. *Ox.* Horns hollow, extending outwards; no canine teeth.

Bull; Bonafus, the same in a wild state, according to Mr. Pennant; Bison, Grunting, Buffalo, Dwarf or Indian.

VI. B E L L U Æ.

33. EQUUS. *Horse.* Fore-teeth 6 above, and 6 below.

Horse, Ass, Zebra.

34. HIPPOPOTAMUS. *Hippopotame.* Fore-teeth above 6, below 4.

River Horse. Mr. Pennant describes this animal as having

F 3

4 cutting

- 4 cutting teeth only above and below.
35. *Sus. Hog.* Fore-teeth above 4, below 6.
Common; Guinea, considered as a variety; Pecary; Capybara, Thick-nosed Tapir of Pennant; Babyroussa.
36. *RHINOCEROS.* Fore-teeth 2 above, and 2 below.

One-horned. Variety with two horns. See Dr. *Parsons* on this subject, *Phil. Trans.* vol. xlii. p. 523, and vol. lvi. p. 32. *Linneus* thinks this may be removed into the order of *Bruta*.

VII. C E T E.

37. *MONODON. Narwal.* Two long strait teeth in the upper jaw, perforating the lip.

Sea Unicorn.

38. *BALÆNA. Whale.* Horny laminae in the upper jaw.

Whalebone Whale, Fin-fish, Hump-backed or Pike-headed, Round-lipped.

39. *PHYSETER. Cachalot.* Teeth in the lower jaw only.

Round-headed, Spermaceti, Crooked-toothed, Plane-toothed.

40. *DELPHINUS. Dolphin.* Teeth in both jaws.
Porpoise, Dolphin, Grampus.

This

This part of the system, taking in a few species described in the *appendix* of the third Tome, and in the *Mantissa* of 1771, contains about 230 species. Mr. Pennant, in his *Synopsis of Quadrupeds*, and our learned friend Professor MARTIN, in his *Elements of Natural History*, by including some animals that were unknown to LINNÆUS, and giving the rank of species to several that were considered by our author as varieties, have extended the number of *Mammalia* to 289 species.

Class II. A V E S. B I R D S.

These are divided by LINNÆUS into six orders, the distinctions of which are chiefly taken from the *beak*, but in some genera it has been necessary to call in the *tongue*, *nares* or *nostrils*, and, in some instances, the *feet*, and other parts. We shall give the characters of the orders as they stand at the head of each; and subjoin the *abbreviated generical* characters, enumerating the number of species under each genus.

I. ACCIPITRES. RAPACIOUS: Birds having the upper mandible of the *beak* furnished on each side with an angular process.

II. PICÆ. PIES. Birds having the *beak* somewhat compressed on the sides and convex on the upper part.

III. ANSERES. WEB-FOOTED. Birds having a somewhat obtuse *beak*, cloathed with a thin skin; gibbous at the base underneath, wide at the end; the *faux* or edges of the base denticulated; the *feet* palmated or webbed, and formed for swimming.

IV. GRALLÆ. WADERS. Birds having the *beak* subcylindrical, and rather obtuse; the *tongue* entire and fleshy; the *thighs* naked for some space above the knees.

V. GALLINÆ. GALLINACEOUS. Birds having the upper *mandible* convex, or arched, and receiving the edges of the lower; *nostrils* half covered, by means of a convex, somewhat cartilaginous membrane; the *rectrices*, or tail-feathers, more than twelve; the *feet* cloven, but the toes connected by a membrane as far as to the first joint.

VI. PASSERES. PASSERINE. Birds having a conical acuminated *beak*; the *nostrils* ovated, open, and naked.

Abbreviated generic characters.

I. ACCIPITRES,

41. VULTUR. *Vulture*. Beak hooked; head naked,
Condor, Harpy, King of Vultures,
&c. 8 species.

42. FALCO, *Eagle*. Beak hooked, and bordered
with a cere at the base.
Eagles, Hawks, Buzzards, Spar-
row-hawk. 32 species.

43. STRIX. *Owl*. Beak hooked; *capistrum*, or
feathers of the fore-
head, thrown over the
beak.
Horn Owls, Grey Owl, Screech
Owl, Little Owl, &c. 12
species.

44. LANIUS,

44. **LANIUS.** *Butcher-bird*, or *Strike*. Beak nearly straight; upper mandible on each side, near the end, notched, and furnished with a denticle.

26 species.

II. P I C Æ.

- a. Feet with three toes before, and one long one behind, formed for walking.

66. **TROCHILUS.** *Honey-sucker*. Beak incurvated, filiform, forming a tube at the extremity.

22 species.

65. **CERTHIA.** *Creeper*. Beak incurvated, acuminate.

25 species, 1 only *English*.

64. **UPUPA.** *Hoopoe*. Beak incurvated, somewhat obtuse.

3 species, 1 *English*.

48. **BUPHAGA.** *Beef-eater* of Mr. Pennant. Beak straight, quadrangular.

1 species.

60. **SITTA.** *Nut-batch*. Beak straight; cuneated at the end.

3 species, 1 *English*.

52. **ORIOULUS.** *Oriole*. Beak straight, conic, very acute. *Golden Thrush*, &c. 20 species, all exotic.

51. **CORACIAS.** *Roller*. Beak cultrated (*sharp or cutting*)

cutting) incurved at the end.

6 species, 1 *Englsh.*

53. GRACULA. *Grackle*. Beak cultrated, equal, naked at the base.

Mino of Edwards, Saulary, Mair-bird of America, &c. 8 species.

50. CORVUS. *Crow*. Beak cultrated; capistrum reversed.

Raven, Crow, Rook, Royston-Crow,

Jack-Daw, Jay, Nut-cracker,

Mag-pye, Cornish Chough, &c.

19 species.

54. PARADISEA. *Paradise-bird*. Beak sub-cultrated; capistrum or forehead covered with down.

Manucodiata of Edwards, Ray, &c. 3 species.

b. Feet with two toes before, and two behind, formed for climbing.

46. RAMPHASTOS. *Toucan*. Beak ferrated; tongue fringed on the edges.

8 species, all *American*.

55. TROGON. *Curucui*. Beak ferrated, hooked at the end.

3 species, all *American*.

45. PSITTAEUS. *Parrot*. Beak covered with the cere; tongue fleshy.

Maccaws, Parrots, Parroquets,

Lory. 47 species.

49. CROTOPHAGA. *Tick-eater*. Beak rough, upper mandible

mandible angulated on each side.

Ani of Brasil. 2 species.

59. *PICUS. Woodpecker.* Beak angulated; tongue vermiform.
21 species.

58. *YUNX. Wryneck.* Beak smooth; tongue vermiform.

English. 1 species only.

57. *CUCULUS. Cuckoo.* Beak smooth; nostrils margined.

22 species, all exotic except one.

56. *BUCCO. Barbet of Mr. Pennant.* Beak smooth, emarginated, and hooked at the end.

1 species.

c. Feet, with the middle and exterior toe joined together, nearly the whole length.

47. *BUCEROS. Horn-bill of Mr. Pennant.* Beak serrated, furnished with a protuberance, or horn, at the base of the upper mandible.

4 species.

62. *ALCEDO. Kingfisher.* Beak trigonal, strait.

15 species, all exotic except one.

63. *MEROPS. Bee-eater.* Beak incurvated, somewhat compressed.

7 species.

61. *TODOS. Tody, Mr. Pennant.* Beak linear, strait, and somewhat depressed.

American. 2 species.

III. ANSERES.

III. ANSERES.

a. Beak denticulated.

67. *ANAS. Duck.* Beak furnished with membranaceous denticles, and nail at the end.

Swan, Burrow-duck, Goose, Duck, Mallard, Tufted Duck, &c. 45 species.

68. *MERCUS. Merganser.* Beak furnished with subulated denticles and nail.

Gooseander, Smew, Lesser Dun Diver, &c. 6 species.

74. *PHAETON. Tropic Bird.* Beak cultrated.
2 species.

73. *PLOTUS. Darter of Mr. Pennant.* Beak subulated.

b. Beak edentulous.

78. *RHYNCHOPS. Skimmer of Mr. Pennant.* Upper mandible much shorter than the lower.

Sea Crow of Ray. 2 species; nearly allied to the Gull genus.

71. *DIOMEDEA. Albatross.* Lower mandible truncated.

Albatross, Black-legged Penguin. 2 species.

69. *ALCA. Auk.* Beak wrinkled transversely.
Auks, Puffin, &c. 5 species.

70. *PROCELLARIA. Petrel.* Nostrils superincumbent.

bent, and subcylindrical.

Storm-finch, Fulmar, Shear-Water,
&c. 6 species.

72. PELECANUS. *Pelecan.* Face entirely naked round the base of the beak.

Pelecan, Corvorant, Shag, Gannet, Booby, &c. 8 species.

76. LARUS. *Gull.* Beak gibbous under the apex. *Gulls, Herring Gull, Arctic Gull,* &c. 11 species.

77. STERNA. *Tern.* Beak subulated, compressed at the apex:

7 species.

75. COLYMBUS. *Diver.* Beak subulated, somewhat compressed on the sides.

Guillemots, Divers, Grebes, &c. 11 species.

IV. GRALLÆ.

a. Four-toed.

79. PHÆNICOPTERUS. *Flaming.* Beak incurvated, as if broken; denticulated: feet webbed.

80. PLATALEA. *Spoonbill.* Beak flattened, and wide at the end.

3 species.

81. PALAMEDEA. *Screamer of Mr. Pennant.* Beak acutely hooked at the end.

Anima and Cariama of Brasil.

82. MYCTERIA.

82. MYCTERIA. *Jabiru*. Lower mandible thick,
and turned upwards.

American. 1 species.

83. TANTALUS. *Ibis*. Beak arcuated; throat
pouched.

Ibis of *Egypt*, *Guara*, &c.
7 species.

84. ARDEA. *Heron*. Beak strait, sharp-pointed.

Demoiselle, *Crane*, *Stork*, *Heron*,
Egret, *Bittern*, *White Heron*,
&c. 26 species.

85. RECURVIROSTRA. *Avoset*. Beak subulated,
thin, depressed, and re-
curved.

1 species.

86. SCOLOPAX. *Curlew*. Beak strait, round, rather
obtuse at the end.

Curlew, *Whimbril*, *Woodcock*,
Snipes, *Stone Plover*, *Godwit*.
18 species.

87. TRINGA. *Sand Piper*. Beak roundish obtuse;
hinder toe very short,
and placed high.

Ruffe, *Lapwing*, *Knot*, *Purr*, &c.
23 species.

88. FULICA. *Coot*. Beak rising at the forehead
and base.

Coot, *Water Hen*, &c. 7 species.

89. PALLAS. *Falcon*. Beak at the base and the
forehead carunculated.

Glavary of *Jacquin*, &c. 5 spe-

cies.

93. RALLUS.

93. **RALLUS. Rail.** Beak somewhat carinated,
bony compressed.

*Land Rail, Water Rail, Small
Spotted Rail, &c. 10 species.*

94. **PSOPHIA. Trumpeter.** Beak somewhat
or convex; nostrils
ovated.

American.

83. **CANCROMA. Boat-bill of Mr. Pennant.** Upper
mandible very gibbous.

Tamatta of Brazil. 2 species.

b. Three-toed, formed for running.

90. **HÆMATOPUS. Oyster-Catcher.** Beak somewhat
compressed, ending in a
wedge.

Sea Pie. 1 species.

88. **CHARADRIUS. Plover.** Beak round, obtuse.
*Sea Lark, Dotterel, Sandpiper,
Green Plover, Long-legged Plover, 12 species.*

95. **ORIS. Bustard.** Upper mandible convex or
arched; tongue emar-
ginated or bifid.
4 species.

96. **STRUTHIO. Ostrich.** Beak conical; wings unfit
for flying.

Ostrich, Cassowary. American.

V. GALLINÆ.

97. **DIDUS. Dodo.** Beak ribbed and sulcated across

the upper mandible;
face naked.

Hooded Swan of Ray. 1 species
only.

98. *PAVO. Peacock.* Head crested; beak naked.
Pea-cock, Chinese Two-spurred Pea-
cock, &c. 3 species.

99. *MELEAGRIS. Turkey.* Head covered with caruncles.

Turkey, Quail, Horned Pheasant of Bengal.

100. *CRAX. Curassow.* Cere investing the whole base of the beak.

Cushew Bird, Curassow, &c. 5 species.

101. *PHASIANUS. Pheasant.* Legs and knees naked.

Common Cock, Pheasant, Painted, &c. 6 species.

103. *TETRAO. Grouse.* Naked papillose membrane above the eyes.

Cock of the Wood, Black Game, White Game, Partridge, Quail, &c. 20 species.

102. *NUMIDA. Pintado.* Carunculated wattles, hanging from each side of the face.

Guinea Hen.

VI. PASSERES.

a. With thick beaks. *Crassirostres.*

109. *LOXIA. Gros-beak.* Beak conical and ovated.
Gros-bill, Gros-beak, Pine Bull-
finch,

finch, Bull-finch, Cardinal, Green-finch, &c. 48 species.

112. FRINGILLA. *Chaffinch*. Beak conical and acute.

Chaffinch, Brambling, Gold-finch, Canary-bird, Red Pole, Sparrow, &c. 39 species.

110. EMBERIZA. *Bunting*. Beak subconical; lower mandible the broader, a little inflexed and narrowed in on the sides.

Sea Lark, Bunting, Yellow Hammer, Reed Sparrow, &c. 24 species.

b. With the upper mandible incurved at the end. *Curvirostres*.

118. CAPRIMULGUS. *Goatsucker*. Beak incurved, depressed, ciliated about the base; nostrils tubular. 2 species.

117. HIRUNDO. *Swallow*. Beak incurved, depressed.

Chimney Swallow, Marten, Sand Marten, Swift, Pratincole of Kramer. 12 species.

115. PIPRA. *Manakin*. Beak incurved, subulated. 13 species, chiefly *S. American*; a beautiful genus of birds!

c. With the upper mandible emarginated, or notched near the apex.
Emarginirostres.

207. **TURDUS.** *Thrush.* Beak notched, subulated, compressed at the base.

Mistle-bird, Field-fare, Red-wing, Thrush, Black-bird, Ring-ouzel, Rose-coloured Ouzel, &c. 28 sp.

208. **AMPELIS.** *Chatterer.* Beak notched, subulated, depressed at the base.

Silk-tail of Ray, Pompadour of Edwards, &c. 7 species.

211. **TANAGRA.** *Tanager.* Beak notched, subulated, conic at the base.

24 species, mostly *American.*

213. **MUSCICAPA.** *Fly-catcher.* Beak notched, subulated, base ciliated, or bristled.

Pied Bird of Paradise of Ray, &c. 21 species.

d. With strait, entire, small, slender beaks. *Simplicirostres.*

216. **PARUS.** *Titmouse.* Beak subulated; capistrum reversed; tongue truncated.

Ox-Eye, Blue Titmouse, Colemouse, Black Cap, Least Butcher Bird, &c. 14 species.

214. **MOTACILLA.** *Warblers.* Beak subulated; tongue jagged; claw of the

the hind toe moderately long.

Nightingale, Hedge-Sparrow, Sedge-bird, White Throat, Wheat Ear, Black Cap, Red Start, Robin, Wren, Golden-crested Wren, &c.
49 species.

105. ALAUDA. Lark. Beak subulated; tongue bifid; claw of the hinder toe very long.

Sky-Lark, Tit-Lark, Wood-Lark, &c. 11 species.

106. STURNUS. Starling. Beak subulate, but flattened at the apex, and marginated.

Starling, Water Ousel, &c. 5 species.

104. COLUMBA. Pigeon. Beak rather arched, or convex; nostrils gibbous, and half covered with a membrane.

Wood Pigeon, and its descendant the Common, Ring Dove, Turtle Dove, Migratory, &c. 40 species.

The *specific* characters in the class of *birds* are deduced from a great variety of particulars. In several, as in the *Falcon* genus, the colour of the *cere*, or naked tunic that surrounds the basis of the *beak*, and the colour of the legs, assist in distinguishing the species. The *colour* of the bird in general is subject to great variation in different countries, as well as in the same country at dif-

ferent seasons in the year, as is more particularly seen in the arctic regions; not to mention that of the sexes in almost all kinds. Our author therefore does not trust to this, wherever a more permanent mark can be found. It must, however, be confessed, that in too many instances, it is necessary to trust entirely to this distinction, howsoever unstable. The form of the *tail*, as it happens to be *even*, *cuneated*, or *forked*, is an excellent and firm note; in the *Parrot* genus its length, as *shorter* or *longer* than the body, is of great service. In others, the *colour* of the *beak*, a *naked* or *crested head*, contribute to form the note of distinction. And in fine, nature has stamped upon others some peculiarity, which points them out immediately; as, the *receptacle* of the lower mandible, in the *Pelican*; two long *tail-feathers*, in the *Tropic-bird*; the direction of the mandibles in the *Cross-beak*, &c. Among the common marks, none more frequently occur than the differences of colour in the *quill-feathers* and those of the *tail*. This class comprehends upwards of 930 subjects.

Class III. AMPHIBIA.

This class is so called by LINNÆUS, not because all the subjects of it are, strictly speaking, capable of living either in air or water; but principally from their power of suspending or performing the function of respiration in a more arbitrary manner than other animals. This class is divided into four *orders*:

I. REPTILES. REPTILES. Amphibious animals breathing through the mouth by means of
lungs

lungs only ; and furnished with four feet.

II. SERPENTES. SERPENTS. Amphibious animals breathing through the mouth by means of lungs only ; destitute of feet, fins, and ears.

III. MEANTES. GLIDERS. Amphibious animals breathing by means of gills and lungs ; furnished with arms and claws.

IV. NANTES. BREATHING FISHES. Amphibious animals breathing at will by means of gills and lungs. The rays of the fins cartilaginous.

Abbreviated generic characters.

I. REPTILES.

119. TESTUDO. Tortoise. Body covered with a shell.

Coriaceous Tortoise, Green Turtle, Hawksbill Turtle, Common Grecian or African Tortoise, Tesselated Tortoise, &c. 15 species.

121. DRACO. Dragon. Body winged.

Flying Lizard, of Bontius, p. 57. 2 species.

122. LACERTA. Lizard. Body naked, furnished with a tail.

a. With a compressed tail ;

Among these is the *Crocodile*,

b. With a verticillated tail ;

The Lizard, *Stellio*.

c. With a round imbricated tail : shorter than the body.

The *Chamæleon*, the *Gecko*, the *Skink*.

G 3

d. With

d. With a round imbricated tail, longer than the body.

The *Iguana*, the *Gunnsey Lizard*.

e. With the body smooth: four toes on the fore feet.

Common Scuff, *Water Eft* or *Newt*, *Salamander*. 49 species.

120. *RANA*. *Frog*. Body naked: no tail.

Surinam Toad, *Common Toad*, *Surinam Frog-fish*. See Phil. Trans. vol. li. p. 653. *Common Frog*, *Tree Frog*, *Bull Frog of America*. See Kalm ii. 170, &c. 17 species.

II. SERPENTES.

123. *CROTALUS*. *Rattlesnake*. Body and tail underneath cloathed with small shields; tail terminating in a horny rattle.

Rattlesnake, &c. 5 species, all *American*, and all venomous.

124. *BOA*. *Serpent*. Body and tail underneath cloathed with small shields; no rattle.

Gigantic Serpent, or *Constrictor*. Vide Adanson's *Senegal*, p. 274. *Hog-nosed Snake* of *Catesby*, 2, t. 56, &c. 10 species; not furnished

furnished with venomous fangs.

125. COLUBER. Viper. Body underneath cloathed with small shields; tail cloathed with scales.

True Viper of Egypt, Horned Viper.

See Phil. Transf. vol. lvi. t.

14. *Berus, or English Viper, Natrix or Common Snake, Naja or Hooded Serpent of Kempf.*

p. 565; *Black Snake*, Kalm ii.

p. 202. 97 species, of which 18 are known to have venomous fangs.

126. ANGUIS. Snake. Body and tail underneath cloathed with scales only.

Javan fourfooted Snake, an anomaly; *Common Slow Worm*, &c. 16 species.

127. AMPHISEPENA. Annulated Snake. Body and tail composed of annular segments.

2 species, both *American*.

128. CAECILIA. Tentaculated Snake. Body and tail wrinkled; not scaly; upper lip furnished with two feelers.

2 species.

III. MEANTES.

SIREN. Siren. Body biped, and furnished with a tail,

Lizard Siren or *Mud Inguana* of *Carolina*. See *Phil. Trans.* vol. lvi. 189, t. 9. For this uncommon animal LINNÆUS was obliged to form a new order. See *Syst. Nat.* tom. I. *addend.*

IV. NANTES.

a. Such as have several branchial holes on each side.

129. *PETROMYZON*. *Lamprey*. Seven branchial apertures on each side of the neck.

Lamprey, Lesser, Lampern.

130. *RAJA*. *Ray*. Five branchial apertures on each side the neck underneath.

Torpedo, Skate, Sharp-nosed Ray, Rough Ray, Sting Ray, Thorn-back. 9 species.

131. *SQUALUS*. *Shark*. Five branchial apertures on the side of the neck, *Picked Dog-fish, Angel-fish, Balance-fish, Tape, Dog-fish, White Shark, Blue Shark, Saw-fish,* &c. 15 species.

132. *CHIMÆRA*. *Chimera*. Single branchial aperture, dividing into four within.

2 species.

b. Such as have a single branchial hole on each side.

133. *LOPHIUS*.

133. **LOPHIUS.** *Fishing-frog.* Two ventral fins;
mouth furnished with
teeth.
Toad-fish. 3 species.
134. **ACIPENSER.** *Sturgeon.* Two ventral fins;
no teeth.
Sturgeon, Strelet or Cavear-fish,
Huso.
139. **CYCLOPTERUS.** *Lump-fish.* Two ventral fins
nearly uniting into one
orbicular fin.
3 species.
135. **BALISTES.** *Old Wife Fish.* Single ventral
fin, or *carene.*
Sea Unicorn, Old Wife Fish, &c.
8 species.
136. **OSTRACION.** *Bony-skin Fish.* No ventral fins;
body entirely clothed
with a bony covering.
Triquetrous Ostracion, Three-horn-
ed, Four-horned, &c. 9 species.
137. **TETRODON.** *Sun-fish.* No ventral fins; belly
rough or muricated.
Ocellated Sun-fish, Common Mole
or Sun-fish, &c. 7 species.
138. **DIODON.** *Porcupine-fish.* No ventral fins;
body set with acute
moveable spines.
Spherical, Oblong. 2 species.
140. **CENTRISCUS.** *Trumpet-fish.* Ventral fins united;
a long moveable spine
on the back, near the
tail.

Scolopax of Gesner, &c. p. 131.

2 species.

141. SYNGNATHUS. *Pipe-fish.* No ventral fins; body articulated.

Needle-fish, Pipe-fish, Hippocampus or *Sea-horse.* 7 species.

142. PEGASUS. *Dragon-fish.* Two ventral fins; upper mandible or beak denticulated, or ciliated.

Flying Dragon of Amboina, &c. 3 species.

This part of the System contains upwards of 290 subjects.

In the **REPTILES** order, the specific characters of the *Testudo* genus are deduced principally from the difference in the *shells*, and the *feet*; which in the *Turtles* are pinniform, and in the *Tortoises* digitated. In the *Lacerta* genus, from the *tail, head, toes*, and various other parts; and in the *Rana*, from the diversity in the *make of the body*, and number of the *claws* on the fore or hinder feet.

In the **SERPENTES** order, the specific distinctions have ever been matter of great difficulty with naturalists, as they were commonly taken from the *colour*, which is subject to an almost infinite variation. Hence it has happened that *Seba*, depending on the *colours* alone, hath, in the opinion of our author, figured the *Baa Constrictor*, or Gigantic Serpent, ten times, as so many distinct species; and the *Coluber Naga*, or Hooded Viper, fourteen. LINNÆUS at length discovered a much

more certain and permanent note, upon which his *specific* characters are solely founded: it was first exemplified in the *Amphibia Gyllenbergiana*, and he has since retained it in all his works, sensible however that it is yet liable to failure: this arises from the number of the small *shields* and *scales*, or *rings* and *rugæ* of the belly and tail; and the proportion those numbers bear to each other in the different species: for example, in our *Common Viper* the *shields* of the belly are usually about 146, and the *scales* of the tail, that is all below the anus, about 39 or 40: the *shields* in our *Common Snake* about 170, and the *scales* about 60.

In the NANTES the specific characters are short, but very various in the different genera, as to the parts of the animal from which they are deduced: in the *Petromyzon* and *Raia*, from the mouth, fins, teeth, &c.; in the latter very much from the body itself: in the *Squalus*, from a variety of particulars: in the *Acipenser*, from the girth or beard, and the dorsal shields, or *squame*: in the *Belistes*, from the fins and tail: in the *Ostracion*, from the different *angulated form* of the body: in the *Tetrodon*, from differences in the body chiefly; and in the remaining genera, from the form of the body, and the differences in the fins.

Class IV. PISCES. FISHES.

In the earlier editions of the *Systema Naturæ*, our author, in the distribution of FISHES, had followed the method of his friend and fellow collegian *Artedi*; whose *Icthyology* he had published during

during his residence in *Holland*, in 1738. This method, which took in the CETACEOUS order, now among the MAMMALIA, and the NANTES, now referred to the AMPHIBIA, was established on the structure or rather *situation* of the *tails* in the *cetaceous* order; and in others, on the difference in the gills, and the *rays* of the *fins*, whether *cartilaginous* or *bony*. In the two last editions, another disposition is attempted: after having dismissed the *cetaceous* order to the MAMMALIA, and the CHONDROPTERYGII or Cartilaginous Fishes, and the *Branchiostegi* to the NANTES, our author forms four orders of the *bony* fishes (which respire by means of gills only) from the *situation* of the *ventral* fins; which he analogically considers as the *feet* of the animal, according as they are placed either *before*, *under*, or *behind* the *pectoral* or *gill* fins, or as in one order wanting the *ventral* fins.

I. APODES. APODAL. Fishes destitute of ventral fins.

II. JUGULARES. JUGULAR. Fishes having the ventral fins placed before the pectoral fins.

III. THORACICI. THORACIC. Fishes having the ventral fins placed underneath the pectoral fins.

IV. ABDOMINALES. ABDOMINAL. Fishes having the ventral fins placed on the abdomen behind the pectoral fins.

Abbreviated generic Characters.

I. APODES.

143. *MURÆNA. Eel.* Apertures of the gills placed behind the pectoral fins.

Sea Serpent, Eel, Conger Eel, &c.
7 species.

144. *GYMNOTUS. Gymnote.* Back destitute of any fin.

Carapo of Brasil, Electric Eel, Beaked, &c. 5 species.

145. *TRICHIURUS. Needle-tail.* Subulated tail without any fin.

Mucu of the Brasilians.

147. *AMMODYTES. Lance.* Head much slenderer than the body.

Sand Eel.

146. *ANARCHICAS. Wolf-fish.* Grinding teeth rounded.

Sea Wolf. In the fossil state frequent, called *Bufoites*.

148. *OPHIDIUM. Snake-fish.* Body ensiform.
Bearded Ophidion, Beardless Ophidion.

149. *STROMATEUS. Pampus.* Body ovated.

Pampus of Sloane. 2 species.

150. *XIPHIAS. Sword-fish.* Upper mandible terminating in an ensiform beak.

Sword-fish of all authors.

II. JUGULARES.

II. JUGULARES.

151. **CALLIONYMUS.** *Dragonet.* Breathing spiracles on the hinder part of the head.

The Harp, &c. 3 species.

152. **URANOSCOPUS.** *Star-gazer.* Mouth flat, opening upwards.

Scabrous. 1 species.

153. **TRACHINUS.** *Weever.* Anus near the breast.

Draco of the old authors.
1 species.

154. **GADUS.** *Cod.* Pectoral fins slender, and ending in a point. With

a. Three dorsal fins, and the jaw bearded.

Haddock, Torfk, Cod-fish, Bib, Whiting, Pout, Poor.

b. Three dorsal fins; jaw not bearded.
Whiting, Cole-fish, Pollack, &c.

c. Two dorsal fins only.

Hake, Ling, Burbot.

d. One dorsal fin.

Mediterranean. 17 species.

155. **BLENNIUS.** *Blenny.* Ventral fins of two rays, small, and not prickly.

Crested, Gutterugine, Smooth, Spotted, Viviparous. 13 species.

III. THORACICI.

156. **CEPOLA.** *Cepole.* Mouth opening upwards, body ensiform.

Tania, &c. 2 species.

157. **ECHENEIS.**

157. **ECHENEIS.** *Sucking-fish.* Top of the head flat, margined, and transversely fulcated.

Remora, Naucrates. 2 species.

158. **CORYPHÆNA.** *Dolphin.* Anterior part of the head very obtuse or truncated. *Dolphin of mariners.*

River Dolphin, Parrot-fish, &c.
12 species.

159. **GOBİUS.** *Goby.* Ventral fins united into one ovate fin.

Black Goby, Spotted Goby. 8 species.

160. **COTTUS.** *Bull-head.* Head broader than the body.

Pogge, Feather Lasher, Miller's Thumb, &c. 6 species.

161. **SCORPÆNA.** *Scorpen.* Head set with prickles or beards.

Porcus, Scrofa, Horrida or Tower-fish.

162. **ZEUS.** *Doree.* Upper lip projecting, or fornicated by means of a transverse membrane.

Doree, Silver-fish of Brown, &c.
4 species.

163. **PLEURONECTES.** *Plaife.* Both eyes on the same side of the head.

With the eyes,

a. On the right side.

Holibut, Plaife, Flounder, Dab, Sole.

b. On

b. On the left side.

The Pearl, the Turbot, &c. 17 species.

164. CHÆTODON. *Pilot-fish*. Teeth very fine, thick set, very numerous, and flexile.

Jaculator-fish. Vide Phil. Trans. vol. liv. t. 9. *Pilot-fish*, &c. 23 species.

165. SPARUS. *Gilt-head*. Teeth very strong; fore teeth sharp; grinders close set, and obtuse.

Sea Bream, &c. 26 species.

166. LABRUS. *Wrasse*. Connecting membrane of the dorsal fin extending beyond the extremity of each ray, in the form of filaments.

Wrasse, *Bimaculated*, &c. 41 species.

167. SCIÆNA. *Cavalbas*. A groove in the back to receive the dorsal fin.

Umbra, *Jaculatrix*. Vide Phil. Trans. vol. lvi. p. 186, t. 8. f. 6. All *Mediterranean*. 3 species.

168. PERCA. *Pearcb*. The gill-covers jagged or serrated.

Pearcb, *Basse*, *Sea Pearcb*, *Ruffe*. 36 species.

169. GASTEROSTEUS. *Stickle-back*. Body at the tail carinated on each side; spines on the back

back distinct from the fins.

Three-spined Common Stickle-back,
Ten-spined, &c. 11 species.

170. *SCOMBER. Mackerel*. Body towards the tail
carinated on each side;
spurious fins, in most
species, near the tail.

Mackerel, Bonst, Tunny, Horse
Mackerel, &c. 10 species.

171. *MULLUS. Surmullet*. Head and body covered
with large deciduous
scales.

Red, Striped, Beardless.

172. *TRIGLA. Gurnard*. Several distinct appen-
dages placed at the
pectoral fins.

Piper, Gurnard, Red Gurnard,
Tub-fish, &c. 9 species.

IV. ABDOMINALES.

173. *CORITIS. Loch*. Body nearly of an equal
width quite to the tail.

Loche, Sand Loche or Fossil Loche.

See Phil. Trans. vol. xlv.

p. 451, t. 2. f. 1, &c. 5
species.

174. *AMIA. Mud-fish*. Head rough, bony, and
denudated.

175. *SILURUS. Sheat*. The first ray of the dorsal
and pectoral fins den-
tated.

H

Sheat,

Beet-fish, Callichthys; *Piso* says,

"In dry seasons this fish travels over small tracts of land in search of fresh water." 21 species.

176. *TEUTHIS. Liver-fish.* Head anteriorly flat, and as if truncated, 2 species.

177. *LOBICARIA. Helmet-fish.* Body invested as with a shelly crust, set with points. 1 species.

178. *SALMO. Salmon.* Posterior dorsal fin adipose, and without rays.

a. *Trouts*; body variegated; teeth manifest.

Salmon, Grey, Salmon Trout, Trout, Char.

b. *Smelts*; dorsal and anal fin opposite.

Smelt, Saurus.

c. *Teeth scarcely perceptible.*

Gwyniad, Umber.

d. *With four branchiostegous rays only.*

29 species.

179. *FISTULARIA. Tobacco-pipe Fish.* Very long cylindrical beak or mandible, with the mouth at the end.

Tabacaria, Chinenfis.

180. **Esox. Pike.** Lower jaw the longest; punctated.
181. **Elops. Seal-fish.** Branchiostegous membrane double; exterior one small, of five rays.
Saurus of Shaw, p. 251. 1.
182. **ARGENTINA. Argentine.** Vent placed very near to the tail.
So called from the silvery skin of the air-bladder. 2 species.
183. **ASPERINA. Albertine.** The lateral line silvery.
2 species.
184. **Mura. Mullet.** Inferior mandible carinated inwards.
Mullet, Abula of Calesky.
185. **EXOCETUS. Flying fish.** Pectoral fins nearly the length of the body.
2 species.
186. **POLYNEMUS. Finger fish.** Several distinct processes or appendages placed with the pectoral fins.
Paradise-fish of Edwards, &c. 3 species.
187. **MORMYRUS. Mormyre.** Branchial aperture linear; and no cover to the gill.
Castive of the Arabians, &c. 2 species.
188. **CLUPEA. Herring.** Belly sharp or keel form, and serrated.

Herring, Sprat, Shad, Anchovy,
&c. 11 species.

189. *CYPRINUS, Carp.* Three branchiostegous rays.

a. Jaw bearded or cirrose.
Barbel, Carp, Gudgeon, Tench.

b. Tail fin entire.

Carasse, Chub.
c. Tail fin trifold.

Gold-fish.

d. Tail fin bifid.

Minnow, Dace, Roach, Ruck,
Bleak, Bream.

The class of Fishes contains about 400 species, but very great additions have been made to this class by later discoveries: among which those made by Dr. *Forskal*, in *Arabia*, are not the least, as appears by his fragments lately published.

Great pains were taken by *Artedi*, and since by *Gronovius*, and our author, to distinguish the species by the number of the rays in the fins; and although, from repeated observations, they are found to agree in many species very remarkably; yet, in others, they vary so much as not to establish a sufficient character. At present, in this system, the specific characters are taken from a great variety of particulars; amongst which, however, the number of the rays in the fins is frequently the most distinctive, and whether so or not, it is subjoined to most species, and usually, as they have been observed by different authors. The form of the tail, the cirri, or beard at the mouth, the length of the jaw, the spots and lines

lines on the body, &c. all conspire in their turn to the same end.

Class V. INSECTA. INSECTS.

No part of the system of nature has undergone a greater change than this class; neither does our author stand more unrivalled, than in the excellent arrangement he has given to this branch of natural history; which, before his time, was nearly without method. It comprehends 87 GENERA, disposed into seven *orders*, founded, in most of them, on the differences observable in the *number* and *texture* of the *wings*. Our intended brevity will not permit a detail of the *genera*, in the succeeding parts of the system; we must, therefore, now that we are descended to the inferior parts of the animal kingdom, only give the definitions of the several *orders*, with a few observations. The first order is called,

I. COLEOPTERA. Insects having the wings covered with two crustaceous cases, divided by a longitudinal suture.

This order is the most numerous; it contains almost all those insects which go under the general name of *Beetles*: and includes upwards of 900 species, ranked under 30 genera. Among these are the Chafers, Stag-beetles, Leather-eaters, Carrion-beetles, Tortoise-beetles, Lady-flies, Honey-beetles, Weevils, Musk-beetles, Glow-worm, Spring-beetles, Water-beetles, Blister-beetle, Rove-beetle, Earwig, and several other *genera*.

II. HEMIPTERA. Half-winged insects; having the shells or cases semi-crustaceous, not divided by

101 : 102 }
[101]
[102]
a straight suture, but incumbent on each other in the margin. The beak curved inwards.

This order contains about 350 species, under 12 genera; among these are the Cock-roach, Camel-cricket, Locusts and Common Crickets, Lanthorn-fly, Flea-locust, Boat-fly, &c. Bug, a numerous genus; Aphis, or Currant-louse; Cochineal-insect, and others.

III. LEPIDOPTERA. Insects with four wings, imbricated or clothed with fine scales or feathers; tongue spiral, and coiled up; body hairy.

This order contains only three genera; but the species are very numerous, nearly 800. The Butterflies, Hawk-moths, and the Moths or *Phalena*. Of the latter, LINNÆUS enumerates 460 species. This being the most beautiful tribe of insects, has been much sought after, and later entomologists have considerably increased this number.

IV. NEUROPTERA. Insects with 4 naked, transparent, or reticulated wings; tail in most kinds without a sting.

Upwards of 80 species in 7 genera; among these are the Dragon-fly, May-fly, Spring-fly, Pearl-fly, Scorpion-fly, &c.

V. HYMENOPTERA. Insects with 4 membranaceous wings, excepting some few species, which are destitute of wings; females with the tail armed with a sting.

This is a numerous order; it contains 220 insects in 10 genera; among these are the Saw-fly or *Tenthredo*, Tailed-wasp, Ichneumon-fly, Ichneumon-wasp, Wasp, Bee, Ant, and Golden Wall-fly, &c.

VI. DIPTERA.

VI. DIPTERA. Insects with two wings; furnished also with a balance or club behind each wing.

This order, under 10 genera, contains near 270 species, among which are the Gad-flies, Gnats, Common Flesh-fly, Wasp-fly, Horse-fly, Bee-fly, and others.

VII. APTERA. Insects without wings, in either sex.

This order contains 290 species under 14 genera, and falls easily into three divisions.

1. With 6 legs: The Sugar-mite, Ground-beet, Death-watch, Louse, Common Flea.

2. With 8 to 11 legs: The Tick-spiders, Scorpion, Crab, King-crab, and Millepede.

3. With numerous legs: The Centipede and Gallyworm.

In forming the genera under each of these orders, the *antennae* hold a principal rank, and particularly in the **COLEOPTERA**; but the author does not trust to them alone; the *elytra* or outward cases, the head, the *rostrum* or mouth, the thorax, and tail; and indeed in almost every genus, some or other of them are called in to assist in forming the character.

In the **HEMIPTERA**, the *rostrum* gives a note of primary use; but here the *antennae*, wings, and feet come in also.

In the **LEPIDOPTERA**, the *antennae* and wings form the character.

In the **NEUROPTERA**, the mouth, wings, and tail.

In the HYMENOPTERA, the mouth, the wings, and the sting.

In the DIPTERA, the mouth or *proboscis* alone.

In the APTERA, the eyes, the tail, and the number of the feet, &c.

Class VI. VERMES.

The sixth and last class contains the VERMES, which are divided into five orders. LINNÆUS very early adopted the new system of *Peyssonnet*, *Jussieu*, and some others, in introducing the corals and corallines into the animal kingdom, under the names of LITHOPHYTA and ZOOPHYTA. This system has had great light thrown upon it by the late excellent Mr. ELLIS, in his history of Corallines, and several papers printed in the Philosophical Transactions.

As this is by far the most anomalous of all the classes, the characters of the orders are very various.

I. INTESTINA. Animals simple, naked, destitute of limbs.

This order includes 7 genera; among which are the Guinea-worm, Ascarides, Earth-worm, Gourd-worm, Leech, &c. It contains but 24 species.

II. MOLLUSCA. Animals simple, naked, not included in a shell, but furnished with limbs.

This order includes 18 genera, containing 110 species. Among these rank the common naked Snail, Sea Hare of *Rondeletius*, *Doris*, Sea Mouse, *Nereis*, *Ascidia*, *Actinia*, or Sea Anemone, *Tetkys*, Cuttle-fish, Sea Lungs, or Blubbers, Star-fish, and *Echinus*, called Sea Hedge-hog, and others.

III. TESTACEA.

III. TESTACEA. Animals, generally of the foregoing order, but included in a shell.

This order takes in the whole tribe of shells, consisting of upwards of 800 species, under 36 genera, and disposed in a method entirely new. The three first genera are the *multivalves*, the next fourteen *bivalves*, and the remainder *univalves*.

IV. LITHOPHYTA. Composite animals, affixed to, and fabricating a fixed calcareous base, called Coral.

This order contains 59 species, under four genera: the *Tubipora*, red tubular Coral; *Madrepores* or Brain Stones; *Millepores*; and another called *Cellepore*.

V. ZOOPHYTA. Animal composite, resembling a flower, and springing from a vegetating stem.

This order contains 14 genera, of which nine are fixed, and the other locomotive: amongst the former rank the *Isis* or red Coral, Sea Fan, *Alcyonium*, Sponge, Corallines, &c.: among the latter, the Polype, Sea Pens, *Tenia*, *Furia*, and lastly the assemblage of chaotic, or microscopical *Animalcula*. The species under this order are 156.

The generical distinctions among the *INTESTINA* arise from the diversity of the body of the animal, almost solely.

In the *MOLLUSCA*, from the body and feelers, called *tentacula*, and from other parts.

In the *TESTACEA*, the included animal, the general differences between the shells themselves, but principally the *cardo* or hinge in the bivalves, and

and the *aperture* in the univalves, furnish the generic note.

In the *LITHOPHYTA*, the inhabitant animal, and the form of the coral itself: and in the *ZOOPHYTA*, the animal, and the very different forms of the fabrications, lay a foundation for the generic notes.

After having thus exhibited a view of the *Classes*, it remains that we give a general account of the method pursued in treating on each species. To this end it must be observed, that throughout the whole *system*, the *classical* character, that of the *order*, and the *generical* note, always make a part in the description of each *species*. After these, our author begins with his own *specific* name for the animal, established upon the most essential difference observable between that and every other species of the *genus*; and here it must be allowed, that he has, in general, happily succeeded, by giving, in the space of two or three lines, a distinction that more immediately points out the animal sought for, than the long and laboured descriptions of many foregoing authors. If the *specific* name is the same that is adopted in any of his former writings, he refers to it. He has, however, in many parts of this enlarged edition, formed new names to animals noticed in the former edition, and in the *Fauna Suecica*. Where indeed the essential or specific distinction is the point in view, this must frequently be the case, so long as new species continue to come in: for, as the essential character of each *species* results from

from the most careful comparison of the whole *genus*, the introduction of a new one must, in many instances, so clash with the old, as to require, perhaps, a total alteration in every *specific* name of the *genus*.

After his own *specific* name, he gives the *synonyms*, and page of the most reputed and authentic writers in each class; and particularly refers to those who have best figured his subject; then the *locus natalis*, and in many instances, more especially among the *Mammalia* and *Aves*, a short but comprehensive history respecting the nature, economy, and uses of the animal. To every animal the author has affixed his *trivial* name, expressive, most commonly, of place where it is found, of its colour, form, or some quality or attribute, descriptive, as far as may be, of the animal; or, in a great variety of cases, where the subject has been well known by a single term, he retains that as his *trivial* name. To instance in the Partridge and Quail, which both belong to his *genus* established under the name *Tetrao*: he therefore calls the former *Tetrao Perdix*, and the latter *Tetrao Coturnix*.

It has been objected to LINNÆUS's classification in various parts of his system, that he has thrown together subjects too different in their general appearance and economy, by keeping too closely to *one* character; to instance particularly in the *MAMMALIA*, by confining himself to the teeth. To this it may be answered, in general, that if *only* quadrupeds were to be classed, no system needed

needed to have been built, as their number is so small: but when it is recollected, that *all Nature* was under his eye, and that therefore the subjects were almost infinite, it became necessary to form the basis of every great division or class, *as far as possible, on one simple foundation*. And perhaps it is the observance of this rule that has given LINNÆUS's system so greatly the advantage over all foregoing writers. For, as nature does not seem to have observed *any* system, ours must be artificial, and will ever have its anomalies. As an artificial system therefore, that must have the preference, which will most readily lead to the subject under investigation; in which case it is of small importance where it is placed, and how far removed from others with which it seems to bear a similar and general appearance.

We shall close this brief view of the arrangement of animals, by exhibiting the number of subjects enumerated, all of which are synonymed by the author, in the 12th edition of his *System*.

Mammalia	219	Insects	3075
Birds	931	Vermes	1163
Amphibia	291	Various,	} 140
Fishes	398	from the	
		Mantissæ	
Total	6217.		

With the first tome of the *Systema Naturæ* is intimately connected a work of the professor's, published under the title of *MUSEUM Ludovicæ Ulricæ REGINÆ, in quo animalia rariora exotica, imprimis insecta*

insecta, et conchyliis describuntur et determinantur prodromi instar editum. Holm. 1764, 8°, pp. 720. This was drawn up, and published, by order of the queen of Sweden, who had constructed a copious and rich cabinet of natural history, at the palace of *Drottningholm*; the subjects of which, as hath been observed, LINNÆUS had been appointed to arrange. The great expence her majesty had bestowed in procuring, particularly insects and shells, had given this collection an advantage that proved very favourable to our author, by throwing in his way a multitude of fine and very expensive objects, which otherwise, probably, he could have had no opportunity of describing; and these were, fortunately, all collected before the publication of the enlarged editions of the *System*.

In this work the *exotic* insects and shells only are introduced; of the former, 436; and of the latter, 434, with twenty-five of the *Mollusca*. The insects chiefly consist of the large and beautiful *Lepidoptera*; and the shells abound with all their elegant varieties. These are described at large, with all that precision, brevity, and accurate arrangement of the several parts, which every where manifests itself so happily in our author's writings. Both in *entomology* and *conchology* a new language is introduced; and these descriptions may well stand as models for future writings.

Annexed to this work is the second part, or rather only the *prodromus*, of the *MUSEUM ADOLPHI Frederici REGIS, in quo animalia rariora, imprimis et exotica, aves, amphibia, pisces describuntur.* 1764, pp.

110. In this additional volume are described at large 156 subjects of the animal kingdom, all belonging to the first four classes; and all acquired since the publication of the first part in 1754. Throughout the whole *System*, LINNÆUS has referred to these books for descriptions at large to all the exotics: and nothing could be more acceptable to the critical zoologist, than to see the plan of this volume perfected through the whole history of animals.

TOM. II. The VEGETABLE KINGDOM.

The second part of the *Systema Naturæ*, relating to vegetables, in all the editions prior to the tenth, was very compendiously exhibited; the author having, after his *Clavis Classium*, only given the names of the *genera*, with their *essential* or abbreviated characters, without touching at all on specific distinctions, which were reserved for the present enlarged edition of the *System*, and for the *SPECIES PLANTARUM*, a work before spoken of. This volume contains upwards of 560 pages; and in the twelfth edition of 1767, by the accession of new materials, is enlarged to 731. It contains, in a most compendious manner, a view of the whole vegetable kingdom, as far as the subjects thereof had come under our author's own inspection, disposed according to that system of which LINNÆUS had been the inventor, founded, as to the classical part, upon the *sexes* of plants; a system now almost universally received. It is in this branch

of the study of nature, that this great naturalist has so distinguished himself. From him *botany* boasts a new era; and HALLER, one of the first writers of this age, in the same line of science, and who alone might dare to rival him, has, with a liberality of mind becoming a great man, allowed this superiority to LINNÆUS.

Before we proceed to a particular account of this part of the system, it may not be improper to premise some observations on *methods* of *botany* in general, before our author wrote. It is needless to urge the necessity of *method* in the study of nature, as it is the very soul of science; and, amidst such a multitude of objects which the vegetable kingdom affords, all attempts towards the acquisition of knowledge without it, must end in uncertainty and confusion. We have sufficient proofs of this in the writers upon plants before the invention of systems, and see and deplore the want of them, in the loss of many valuable articles, not only in the *Materia Medica*, but in the *Materia Piñoria*, and *Tintoria* of the ancients. Articles, the virtues and properties of which appear to have been well ascertained, are now lost to us, for want of a more scientific arrangement of the subjects, and accuracy in the descriptions of them.

Botanic writers chose very different methods of arranging plants, not only before, but since, the invention of systematic botany. The *alphabetic* has been much followed, especially in local catalogues. Some have disposed the plants according to *the time of flowering*; as *Paull*, in his

Quadripartitum

Quadripartitum Botanicum, published in 1639; *Besser*, in the *Hortus Eystettensis*, 1640; and *Dillenius*, in the *Catalogus Giffensis*, 1719. Others have arranged them according to the *different places of their growth*; as the authors of the *Historia Lugdunensis*, in 1587; and some according to their *virtues in medicine*. Others again, observing that numbers of vegetables agreed with each other in their general habit and appearance, or had a certain harmony and proportion in the form and disposition of their roots, leaves, flowers, or fruit; in their particular mode of growing, flowering, or foliation, saw that they naturally fell as it were into classes, agreeable to such distinctions. Hence their division of trees, into *pomiferae*, *pruniferae*, *bacciferae*, *nuciferae*, *glandiferae*, &c.; of herbs, into *bulbosae*, *siliquosae*, *umbelliferae*, *verticillatae*, *papilionaceae*, &c. These were so many *classes* or *orders*, which nature had so characterized that they could not escape their notice; and, could all the subjects of the vegetable kingdom be *properly reduced* to such combinations, and the whole chain *properly connected*, we should then see what is meant by the NATURAL METHOD, that *ultimum et desideratum* of botany, of which our author says, however, "*Nec sperare fas est, quod nostra Aetas systema quoddam naturale videre queat, et vix seri nepotes.*" Nevertheless the best writers of the last century, such were *John* and *Caspar Baubine*, endeavoured to preserve the above-mentioned arrangement, although it was in a rude manner. In this they were followed by our own countrymen *Gerard* and *Parkinson*, but as they

they established no precise definitions to their classes, so in their subdivisions, or chapters, they paid little or no regard to the minuter parts of distinction, taken from the fructification; hence, nothing like *generical notes* can be discovered in their methods: so that the only resource, in finding many of their plants, was, to read over their long and tedious descriptions, which, after all, were frequently insufficient to distinguish the plant sought for.

That great naturalist *Conrade GESNER*, who died in 1565, in his 50th year, appears to have been the first who thought, with any precision, of a method of classing plants from the *flower*, or *fruit*; but he only slightly touches thereon in his epistles; he lived not to bring any thing to perfection in this way. It was reserved for *Cæsalpinus*, physician to Pope *Clement VIII.* to be the first author who arranged plants in a true systematic manner, in his *Libri de Plantis*, published in 1583, in which he establishes the characters principally from the fruit. It is wonderful, that after his time, though so many eminent botanists flourished, among whom were the two *Bauhines*, no one ever thought of pursuing the plan he laid down, until *Morison* and *Ray*, who both published, nearly together, their separate systems, founded also upon distinctions principally drawn from the fruit. Since their time, others have laboured to bring their systems to perfection; as *Knaut* in *Germany*; *Paul Herman*, and *Boerhaave*, in *Holland*; and *Dillenius*, late professor at *Oxford*, had still farther

their perfected Mr. Ray's method, as is evident from the arrangement he has given to the *British* plants, in the third edition of that author's *Synopsis*.

Several elegant systems have also been formed from the *flower*, as the basis of the *classical* character; in considering which, both the *regularity* and *irregularity*, as well as the *number* of the *petals*, have been made the principal distinction. *Rivini*, at *Leipsic*, in 1690, was the first who took the flower as the foundation of his method, as did *Ruppius* in 1718. But no one carried this method to such perfection as *Tournefort*, in 1694, who forms his *classical* character from the *figure* of the *flower*, and establishes his *orders* or subdivisions on the different *situation* of the *fruit*, whether above or below the *empalement* or *receptacle*.

Besides these methods, in which the authors have considered one part only, either *flower* or *fruit*, as the base of their systems, several others have been constructed of late years, in which vegetables have been arranged, as far as possible, according to what have been called the *natural classes*; the foundations of which take in a numerous set of characters, arising from a combination and agreement in the *habit* of the plants, as well as their *harmony* in the essential *parts* of *fructification*. Among these, that of *Van Royen*, late professor at *Leyden*, is among the most elegant attempts towards this *ultimum* in botany. This is exhibited in the *Prodromus Floræ Leydenfis*, 1740. He is followed by *Gmelin*, in the *Flora Sibirica*,

1747, &c. These authors, as also L. Gerard, in his *Flora Gallo-provincialis*, Paris 1761, preserve the *natural generical characters* of LINNÆUS almost entire through their systems; and the latter writer has, with some variations, taken the *orders* of a *natural method*, constructed by B. Jussieu, for his *classes*. HALLER also planned, and brought to great perfection, a method of this kind, as is exhibited in his *Enumeratio Stirpium Helvetiæ*, 1742, and in the *Hortus Gottingensis*, 1753, which he has since still more elaborated, in a work of infinite labour and merit, the *Historia Stirpium Helvetiæ*, 3 tom. fol. 1768.

LINNÆUS himself very early attempted a *natural method*; but it is evident he thought there were too many links wanting in the chain, to render it the readiest guide to botanical science; since he soon deserted it, although he continued to improve it to the last: however he only reduced the *genera* into *orders*, but did not venture so far as to form the *classical* part of a system on that plan. The present learned and indefatigable professor Dr. HOPE, at *Edinburgh*, whose zeal and success in cultivating and diffusing the principles of the *Linnaean* system are well known, has constructed perhaps the most elaborate attempt of this kind that the botanists have ever seen. We join with many others in wishing that he may be enabled to give it all that perfection which may encourage him to present it to the public.

Methods have also been formed from the different species and arrangement of the *calyx*, or cup

of the flower in plants. Professor *Magnol*, of *Montpelier*, published in 1720 on this plan; and LINNÆUS himself in 1737, but he did not pursue it.

Every method of arrangement hath its advantage in some respect or other; and it is surely rather to be regretted, howsoever the *flower* may claim the preference, that a method founded in the distinctions of the *fruit*, should not also have as it were a secondary place in common use; for, as all artificial methods are only supposed to be so many *succedanea* to the *natural* one, a due attention to each might tend to illustrate the natural classes, to connect them, and reduce the anomalies, and so far pave the way to the accomplishment of that scheme, which, however, will yet by many be considered as quite impracticable in botany.

LINNÆUS was the first who constituted the *stamina* and *pistils* as the basis of an artificial method of arranging plants; and he tells us, in his CLASSES PLANTARUM, he was led to this by considering the great importance of these parts in vegetation. They alone are the essentials necessary to fructification; all other parts, except the *anthera* and *stigma*, being wanting in some flowers; and the present philosophy of botany regards the former as the *male*, and the latter as the *female* organs of generation in plants. As such indeed they must be considered *analogically*, and in a philosophical view; yet, perhaps, the *Linnean* system, admirable as it is, would not have been less acceptable had the classical terms been expressive only

only of *number* and *situation*, without regard to the offices of the parts in framing the terms. *Ludwig*, of *Leipsic*, who has endeavoured to combine the systems of *Rivinus* and *LINNÆUS*, by taking his *classes* from the method of the former, and his *orders* from that of the latter, has avoided this mode of expression, in substituting the terms *monanthæ*, *monostylæ*, &c. &c.

The author begins the new and enlarged edition of the *Systema Vegetabilium* of 1767, by premising a compendious view of the philosophy of vegetation, and then proceeds to what he calls *Delineatio Plantæ*, something analogous to what he had entitled, in the editions prior to the 10th, *Methodus Demonstrandi Vegetabilia*. Here he introduces all the terms he makes use of in describing plants, and, by a methodical and apt disposition of them, really explains them at the same time. After this, he gives the *Clavis et Characteres Classium*, and then comes to the system itself.

The prerogative of any artificial system in botany, is supposed to consist in its keeping together, as much as possible, the *genera*, in what are called the *natural classes* or orders, and thus so far approaching to the system of nature. All artificial systems being founded on *some*, or *other*, or *all* the parts of *fructification*, without regard to *habit*, will be found in many instances to break the order of the *natural classes*, and disjoin *genera*, which nature seems to have classed. The more simple and uniform the classical characters of any system are, the more they are likely to interfere in this respect; nevertheless, it is pleasing to observe, how

well many of the *natural* classes are kept together in the *Linnean* system; the characters of which enjoy the advantage of being very simple, and easy to retain in the memory, and of being founded on the parts of plants as little subject to variation as any whatever: yet, like all other methods, it has its defects; of which no one was more sensible than the author himself. There are many instances of particular species that break through the *generical* and *classical* characters of the system itself: but for these defects there is no other remedy, at present, than that which our author has applied, in the volume under consideration, and which ought ever, in arrangements of this kind, to be rigidly observed. Wherever these *anomalies* take place, they are mentioned among the *fictitious* characters, under the class and order to which the *number* of *stamina* or *pistils* entitle them to a place.

The *sexual* system briefly is as follows:—All known plants are divided into 24 CLASSES; the characters of which are established upon the *number*, or different situation, or arrangement of the *stamina* or male organs; and the ORDERS, or subdivisions, of these classes, as far as possible, on a similar number, situation, or arrangement, of the *pistils*, or female organs.

The first twenty classes contain what the author calls *hermaphrodite* flowers, or such as have the *stamina* and *pistils* both within the same *cup* or *petals*, or standing on the same *receptacle*, where those are wanting. Of these twenty, the first *ten* classes proceed in an uninterrupted series, from MONAN-

DRIA to DECANDRIA; the plants of each having as many stamina as the title expresses.

The 11th class is DODECANDRIA, as there are no plants yet discovered which have only eleven stamina.

The 12th, ICOSANDRIA; such plants as have about 20 stamina, or more; but always arising from the *calyx* or *corolla*, and not from the *receptacle*.

The 13th, POLYANDRIA; such as have from twenty to even a thousand stamina; but always arising from the *receptacle*.

The 14th class, DIDYNAMIA; such as have *four* stamina, two long and two short. The essential character of this class does not consist in the *number* of stamina, otherwise the plants might be referred to the *tetrandria* class; but, in having two of the stamina shorter than the other, one pistil only, and an irregularly-shaped corolla.

The 15th, TETRADYNAMIA; plants with *six* stamina, four long and two short.

The 16th, MONADELPHIA; such as have the stamina not distinct at the base, but united into one body.

The 17th, DIADELPHIA; such as have the stamina united at the base into two bodies.

The 18th, POLYADELPHIA; such as have the stamina united at the base into several bodies.

The 19th, SYNGENESIA; such as have the *anthers*, but not the filaments, coalescing together, so as to form a tube or cylinder, through which the pistil is commonly transmitted.

The 20th, GYNANDRIA ; such as have the *stamina* springing from the *pistil* itself.

The 21st, MONOECIA ; such as have separate male and female flowers on the same plant.

The 22d, DIOECIA ; such as have separate male and female flowers on separate plants.

The 23d, POLYGAMIA ; such as have constantly, besides hermaphrodite flowers, others, either male or female, on the same plant.

The 24th, CRYPTOGAMIA ; containing those plants the mode and organs of whose fructification are not yet sufficiently ascertained ; heretofore called imperfect plants.

The secondary part of the system, the ORDERS, or subdivisions of the foregoing classes, are established on the *number* of the *pistils* or female parts, through a considerable part of the system ; but in other parts, from various characters. Thus,

The arrangement from number is pursued no farther than through the first thirteen classes : that is, so long as the *classical* character, uninterruptedly, depends on the *number* of *stamina*, so long the *orders* likewise depend on the *number* of *pistils* : but, when *situation* or different *arrangement* take place, the *orders* are most commonly founded on other distinctions, which we shall briefly specify.

The 14th class, or *Didynamia*, is divided into GYMNOSPERMIA and ANGIOSPERMIA : the former having four naked seeds ; the latter having the seeds inclosed in a seed-vessel.

The 15th, *Tetradynamia*, has two orders, according

ding to the size and shape of the *pod* or *shale*; *Striculosa*, short; and *Siliquosa*, long.

The orders in the three next classes, *Monadelphia*, *Diadelphia*, and *Polyadelphia*, are formed from the NUMBER of the *stamina*.

Those of the *Syngenesia* class are six: in five of which the plants are *POLYGAMIÆ*, and in the remaining one *MONOGAMIÆ*; and the differences in the orders of the former, arise from the different structure or sex of the *floscules*, constituting the whole flower.

In the 20th class, *Gynandria*, the arrangement of the orders arises from the NUMBER of the *stamina*, as in the 16th, 17th, and 18th classes.

In the 21st and 22d classes, the *Monoecia* and *Dioecia*, the classical characters of the foregoing parts of the system are adopted as characters of the orders, as far down as to the *Monoecia* class itself. Thus the first order of those classes contains *MONANDROUS* plants, and the last *GYNANDROUS*.

The 23d, the *Polygamia* class, is divided into three orders, as the plants are *MONOECIOUS*, *DIOECIOUS*, or *TRIOECIOUS*.

The 24th and last class, *Cryptogamia*, is divided into four orders, containing the *FILICES*, *MUSCI*, *ALGÆ*, and *FUNGI*.

Some Examples of Plants, throughout all the Classes and Orders of the Linnean System; specifying also the Number of Genera under each Order, and the Number of Species in each Class, synonymed in the Species Plantarum.

CL. 1. MONANDRIA. 34 species.

Monogynia. 11 Genera; among which are, *Canna*,
Indian Reed, Glass-wort, Mares Tail.

Digynia. 4 Gen. Star-wort, Berried Orach.

2. DIANDRIA. 186.

Monogynia. 29 Gen. Jasmine, Privet, Rosemary.

Digynia. 1 Genus. Vernal Grass.

Trigynia. 1 Genus. Pepper.

3. TRIANDRIA. 412.

Monogynia. 29 Gen. Valerian, Saffron, Iris.

Digynia. 29 Gen. Most of the Grasses and Grain,
Sugar-cane.

Trigynia. 11 Gen. Blinks, *Minuartia*, *Polycarpon*.

4. TETRANDRIA. 335.

Monogynia. 61 Gen. Teasel, Scabious, Madder.

Digynia. 6 Gen. Pursley Piert, Dodder.

Tetragynia. 7 Gen. Holly, Pondweed, Pearlwort.

5. PENTANDRIA. 976.

Monogynia. 138 Gen. Comfrey, Campanula, Hen-
bane, Buckthorn, Ivy, Periwinkle.

Digynia. 170 Gen. Gentian, Carrot, Hemlock.

Trigynia. 16 Gen. Elder, *Viburnum*, Chickweed.

Tetragynia. 2 Gen. Grass of Parnassus.

Pentagynia. 9 Gen. Flax, Sun-dew.

Polygynia. 1 Gen. Mouse-tail.

6. HEXANDRIA.

6. HEXANDRIA. 330.

Monogynia. 56 Gen. *Narcissus*, Lilly, Tulip.

Digynia. 2 Gen. Rice, *Atraphaxis*.

Trigynia. 9 Gen. Dock, Colchicum.

Tetragynia. 1 Gen. *Petiveria*, or Henweed.

Polygynia. 1 Gen. Water Plantain.

7. HEPTANDRIA. 6.

Monogynia. 2 Gen. Horse Chesnut, *Trientalis*.

Digynia. 1 Gen. *Limeum*.

Tetragynia. 1 Gen. *Saururus*, or Lizard's Tail.

Heptagynia. 1 Gen. *Septas*.

8. OCTANDRIA. 169.

Monogynia. 31 Gen. Indian Cresses, Heath.

Digynia. 4 Gen. *Mæbringia*, *Weinmannia*.

Trigynia. 5 Gen. Knotweed, Mangrove-grape.

Tetragynia. 3 Gen. *Paris*, Moschatel.

9. ENNEANDRIA. 19.

Monogynia. 4 Gen. Bay, *Anacardium*.

Trigynia. 1 Genus. Rhubarb.

Hexagynia. 1 Gen. *Butomus*, or Flowering Rush.

10. DECANDRIA. 425.

Monogynia. 50 Gen. Rue, Bead-tree, Arbutus.

Digynia. 12 Gen. Saxifrage, Soap-wort, Pink.

Trigynia. 11 Gen. Bladder Campion, Catchfly.

Pentagynia. 14 Gen. Sedum, Lychnis, Cockle.

Decagynia. 2 Gen. *Phytolacca*, or Pokeweed.

11. DODECANDRIA. 131.

Monogynia. 20 Gen. Asarabacca, Spiked Willow-herb.

Digynia. 2 Gen. Agrimony, *Heliocarpus*.

Trigynia. 2 Gen. Dyers Weed, Spurge.

Pentagynia. 1 Gen. *Glinus*.

Dodecagynia.

Dodecagynia. 1 Gen. House-leek.

12. ICOSANDRIA. 218.

Monogynia. 10 Gen. Myrtle, Almond, Plum.

Digynia. 1 Gen. White-thorn and White Beam-tree.

Trigynia. 2 Gen. Service-tree and Quicken-tree.

Pentagynia. 6 Gen. Apple-tree, Medlar, Dropwort.

Polygynia. 9 Gen. Rose, Strawberry, Cinquefoil.

13. POLYANDRIA. 269.

Monogynia. 35 Gen. Poppy, Lime-tree, *Cistus*.

Digynia. 4 Gen. Peony, *Calligonum*.

Trigynia. 2 Gen. Lark-spur, Aconite.

Tetragynia. 3 Gen. Bug-wort.

Pentagynia. 3 Gen. Columbine, *Nigella*.

Hexagynia. 1 Gen. Water-aloe.

Polygynia. 18 Gen. Anemone, *Ranunculus*.

14. DIDYNAMIA. 465.

Gymnospermia. 35 Gen. Mint, Hore-hound, Thyme.

Angiospermia. 62 Gen. Eyebright, Toad-flax, *Acanthus*.

15. TETRADYNAMIA. 215.

Siliculosa. 14 Gen. Cresses, Scurvy-grass.

Siliquosa. 17 Gen. Mustard, Rhadish, Kale.

16. MONADELPHIA. 181.

Pentandria. 4 Gen. *Hermannia*, *Melochia*.

Decandria. 3 Gen. European Geraniums.

Endecandria. 1 Gen. *Brownea*, or Porto Bello Rose.

Dodecandria. 1 Gen. *Pentapetes*.

Polyandria. 17 Gen. Mallow, Hibiscus.

17. DIADELPHIA.

17. DIADELPHIA. 512.

Pentandria. 1 Gen. *Monnieria*.

Hexandria. 2 Gen. *Fumitory*.

Ostandria. 2 Gen. *Milk-wort*.

Decandria. 27 Gen. *Broom*, *Furze*, *Lupin*, *Pease*.

18. POLYADELPHIA. 37.

Pentandria. 2 Gen. *Monsonia*, *Cacao*, or *Chocolate*.

Icosandria. 1 Gen. *Orange-tree*.

Polyandria. 7 Gen. *St. John's Wort*.

19. SYNGENESIA. 905.

Polygamia equalis. Florets all hermaphrodite. 40 Gen. *Lettuce*, *Dandelion*, *Thistle*, *Hemp*, *Agrimony*.

Polygamia superflua. Florets of the disk, hermaphrodite; of the radius, female. 37 Gen. *Groundfel*, *Tansy*, *After*, *Chamomile*.

Polygamia frustranea. Florets of the disk, hermaphrodite; of the radius, neutral. 7 Gen. *Sun-flower*, *Rudbeckia*, *Centaurea*, *Knapweed*.

Polygamia necessaria. Florets of the disk, male; of the radius, female. 13 Gen. *Marigold*.

Polygamia segregata. Florets in separate cups, within a common calyx. 6 Gen. *Globe Thistle*.

Monogamia. Simple flower. 7 Gen. *Cardinal-flower*, *Violet*, *Balsam*.

20. GYNANDRIA. 200.

Diandria. 9 Gen. *Orchis*, *Satyrium*.

Triandria. 4 Gen. *Ferraria*, *Sisyrinchium*.

Tetrandria. 1 Gen. *Nepenthes*.

Pentandria. 3 Gen. *Ayenia*, *Passion-flower*.

- Hexandria*. 2 Gen. Birthwort.
Decandria. 2 Gen. *Helicteres*.
Dodecandria. 1 Gen. *Cytinus*.
Polyandria. 8 Gen. Arum, Grass-wrack.

21. MONOECIA. 290.

- Monandria*. 5 Gen. Horned Pond-weed, *Elaterium*.
Diandria. 2 Gen. *Anguria*, Ducks-meat.
Triandria. 12 Gen. Bur-weed, Sedge, Sea Laurel.
Tetrandria. 8 Gen. Birch, Box, Nettle, Mulberry.
Pentandria. 9 Gen. *Xanthium*, Amaranthus.
Hexandria. 2 Gen. *Zizania*, *Pbarus*.
Heptandria. 1 Gen. *Guettarda*.
Polyandria. 13 Gen. Arrow-head, Oak, Hasel.
Monadelphbia. 15 Gen. Pine-tree, Cypress, *Ricinus*.
Syngenesia. 6 Gen. Gourd, Cucumber, Bryony.
Gynandria. 2 Gen. *Andrachne*.

22. DIOECIA. 157.

- Monandria*. 1 Gen. *Najas*.
Diandria. 3 Gen. *Vallisneria*, Willow.
Triandria. 5 Gen. Berry-bearing Heath.
Tetrandria. 5 Gen. Mistletoe, Gale, Sea Buck-thorn.
Pentandria. 12 Gen. Spinach, Hemp, Hops.
Hexandria. 6 Gen. Black Bryony, Poplar.
Emneandria. 2 Gen. Mercury, Frog-bit.
Decandria. 4 Gen. *Schinus*, Myrtle-leaved Sumach.
Dodecandria. 2 Gen. Moon-feed, Cretan Hemp.
Polyandria. 1 Gen. *Cliffortia*.
Monadelphbia. 6 Gen. Juniper, Yew.
Syngenesia. 1 Gen. Butcher's Broom.
Gynandria. 1 Gen. *Clusia*.

23. POLYGAMIA. 163.
Monoecia. 22. Gen. White Hellebore, Orach,
 Maple.
Diœcia. 10 Gen. *Gleditsia*, Ash-tree, Tupelo.
Trioecia. 2 Gen. Fig-tree, Carob.

24. CRYPTOGAMIA. 657.
Filices. 18 Gen. Horse-tail, Adders Tongue, Fern.
Musci. 11 Gen. Wolfs-Claw Moss, Goldilocks.
Algæ. 12. Gen. Liverwort, Byssus, Fucus.
Fungi. 10. Agarics, Mushrooms, Morels.

App. PALMÆ. 11.
 9 Gen. Date, Coco-nut, Cabbage-palm.

The GENERA are established upon the assemblage of all the parts of fructification compared together, according to their *number, figure, proportion, and situation*. Of these we have spoken before, as they constitute a large volume in octavo, to which we refer.

But, besides these NATURAL CHARACTERS, or GENERA at large, our author has invented, for brevity's sake, two other kinds of characters, which he calls FACTITIOUS and ESSENTIAL. The former serve to distinguish each genus from other *genera* of the same *artificial* order only, by enumerating the most remarkable differences: these greatly facilitate the labour of a young botanist. The ESSENTIAL characters, could they be rendered perfect, are designed to distinguish the *genera* from each other in the *natural* orders; but they are not complete as yet, except in a few instances; and possibly

possibly they exist but in a small number: nevertheless, they are attempted through the whole system, to save the trouble of turning over the *natural characters* at large.

As this volume was intended to contain all the plants hitherto known, consequently the *natural characters* could not be introduced; but the *fictitious* and *essential* ones are placed, the former at the head of each *class*, and the latter before each *genus*. With each generical name the author refers to the number where it is exhibited at large, in the last edition of the *Genera Plantarum* in 1764, and to the page of the *Species Plantarum* of 1762, where the species are detailed and the *synonyms* added; as he gives in this volume only the specific name invented by himself.

In forming the last branch of the system, the SPECIFIC names, LINNÆUS has done more than all the writers on the subject had done before him, and taken the utmost pains to fix them upon distinctions as permanent and invariable as possible. This is indeed the ultimate object of all method; and on this plan he has given new *specific* names to all the plants that have come to his knowledge: names, not taken (as had been customary before) from that of the discoverer, the likeness of the plant to other species, place of growth, time of flowering, its size, the colour of the flower, or of the plant, smell, taste, or virtues in medicine, or any other such vague, indefinite, or mutable circumstance; but from some remarkable difference in the root, trunk, stalk,

stalk, and particularly the leaf, foliation, ramification, or some other abiding distinction.

Besides these *specific* names or descriptions, LINNÆUS has invented, and, in all his works, after the first edition of the *Species Plantarum* in 1753, has applied what he calls TRIVIAL names to each plant, consisting of a single adjunct to the generical name, expressive, if possible, of some essential distinction of the species: as for instance, *integrifolia*, *laciniata*, *erecta*, *repens*, *aquatica*, *montana*, &c. : sometimes, of the name of the inventor; and where, from the laws of his *Fundamenta Botanica*, he has been obliged to change the generical name of a plant well known before, and especially if it was an *officinal* one, he frequently retains the *old generical* name as his *trivial* epithet. Thus as the Penny-royal, or *Pulegium*, really belongs to the *Mentha* genus, according to his characters, he therefore calls it *Mentha Pulegium*. The Horseradish, known by the old name *Armoracia*, as it agrees with the *Cochlearia* genus, he calls *Cochlearia Armoracia*.

The VARIETIES of plants, which, for want of fixing true *specific* characters, had almost increased the number of plants double what LINNÆUS thinks they really are, in this work, as in the SPECIES, are totally excluded. Our author has indeed, in the opinion of many of his contemporary botanists, carried this matter too far, in disallowing the name of species to many plants that are thought to have sufficiently permanent distinctions.

To conclude, the space of time elapsed since the publication of the *Genera* and *Species Plantarum*, to-

gether with the vast quantity of new materials acquired from all parts of the world, enabled our author greatly to elaborate this last edition, and to amend very many *generical* and *specific* characters; as also to make many removes, tending greatly to the advancement and perfection of his work. Among these removes, many have taken place, particularly in the *Monœcious*, *Diœcious*, and *Polygamous* classes; which is the less to be wondered at, since observations have confirmed, that there are plants of these classes which, in their younger state, have produced only male flowers, afterwards both male and female, and at length only female.

The *Species Plantarum* contains near seven thousand three hundred plants. In this volume, the number is augmented by the addition of new plants, and such as were unknown by our author before, to above seven thousand eight hundred.

It is proper to remark, that this second tome of the System was immediately preceded by *MAN-TISSA PLANTARUM Generum, editionis sextæ, et Specierum editionis secundæ*. Holm. 1767, pp. 142. in which are described, as in the *Genera Plantarum*, the natural characters at large of forty-four *genera*, newly constructed. These are followed by an enumeration of upwards of four hundred and thirty new species, with their synonyms, as in the *Species Plantarum*. All these plants are included in the volume of the System of which we have just given the account.

TOM. III. The FOSSIL KINGDOM.

We are now to accompany our author into the *Fossil* kingdom; in which, though he very early gave a specimen of his method of classing, he did not fully exemplify, as in vegetables, until the year 1768, when the third tome of the 12th edition of the *Systema* was published, containing the REGNUM LAPIDEUM. This volume makes 222 pages, and is concluded with a short appendix of some unnoticed, or not well described animals and vegetables; together with a general index of the author's own *generical* names throughout every part of the *System*, distinguishing by a different type the subjects of the three kingdoms, the whole amounting to 1820 *genera*.

In arranging Fossils, there have been various methods invented; each of which have had their patrons, and, for different purposes, each have their advantage. Some have founded the basis of their system on the *figure, colour, structure*, and other external and visible characters; yet, scarcely ever trusting solely to these, they called in the aid of chemistry, so far at least, as the mineral acids would assist them. Others, as the professed chemists and metallurgists, have established their arrangement chiefly on *chemical principles*, as more immediately leading to the *origin* of fossil bodies in general; on which it must be acknowledged, the best basis for a system must be built, when we are happy enough to get sufficient light for this purpose: and at present, mineralogists throughout the world seem more intent on this view than ever:

and probably the due consideration and extension of the volcanic system, will open new sources of information in this way.

This volume begins with LINNÆUS's own theory of the origin of fossil bodies in general, and their several combinations into those forms in which we meet with them in the body of the earth. The methodical and abbreviated manner in which our author has here given his *philosophy* of fossil bodies, renders it incapable of an abstract. He then proceeds to give a synoptical or classical view of the several systems of arranging those bodies, as they stand exhibited in the best authors on the subject, beginning with *Bromelius*, who published in 1730, and enumerates *Wallerius* in 1747, *Woltersdorf* in 1748, *Cartheuser* in 1755, *Justi* 1757, *Anonymus* [*Cronstedt*] in 1758, and concludes with *Vogel* in 1762. To each of these he has subjoined short remarks relating to their methods, and theory of fossil bodies, and concludes this introductory part with an explanation of the terms of art used in his own work.

In these *termini artis*, our author, with his usual precision, has defined a set of terms equally new and curious, which are principally adapted to, and used in, the ultimate and most difficult part of the System, the specific characters. They are happily framed to express all differences in the *figures* of fossil bodies; in their *crust*, or outward appearance; their *superficies*; their *component particles*, or *fibres*; in their *texture*, whether plated, fissile, &c.; in their *hardness*; or in their *colour*: the alterations they

they undergo by *solution*, whether by acids, or by fire.

It has been doubted by some of the most respectable mineralogists, whether we ought to descend below what are called *generical* distinctions in the fossil kingdom, so infinitely do the subjects thereof vary, and so imperceptible in general is that gradation by which they run into each other, in the various combined forms, in which they are found in the earth. In the mean time, some distinctions of this kind seem quite necessary in systems established principally on external characters. Those which have for their basis the *elementary* or *constituent principles of bodies*, as analyzed, may stand with propriety in the form of *synoptical* tables, as exemplified in *Cronstedt's* mineralogy. LINNÆUS and *Wallerius* were among the first who attempted the arduous task of fixing the *specific* characters: whether future mineralogists will adhere to, and improve this part of the scheme, time only must shew.

In all systems of the fossil kingdom, writers have been more particularly embarrassed by the *earths* and *stones*, especially when those have been more or less reduced to the state of *ores*, by the admixture of *metallic* principles. *Salts*, *inflammables*, and *metals*, generally falling more easily, and almost naturally, into their several classes, or orders. The chemical systematics and metallurgists, begin usually with the *earths*, considering them as the basis of stones: LINNÆUS begins with the latter, professing to take a middle way between the mere *metallurgist*, and those who

characterize from external appearance only. He divides the whole REGNUM LAPIDEUM into three classes, under the names of *Petræ*, *Mineræ*, and *Fossilia*, each being subdivided into several orders, the whole comprehending 54 genera. We must only give a general account of his *classical* characters, and those of the *orders*; and enumerate the *genera* under each, with some of the most distinguished *species*.

Class I. PETRÆ. STONES.

Fossil bodies originating from a terrene principle by cohesion :

Simple, as being destitute of saline, inflammable and metallic principles, as component parts thereof :

Fixed, as not being entirely and intimately soluble : and,

Similar, as consisting of homogenous component parts.

Order I. HUMOSÆ. Originating from vegetable earth : combustible, and leaving gross light ashes.

Order II. CALCARIÆ. Originating from calcareous marine animal bodies : becoming light and porous in the fire, and falling into an impalpable powder.

Order III. ARGILLACEÆ. Originating from the viscid sediment, of the sea ; somewhat unctuous to the touch, and hardening in the fire.

Order IV. ARENATÆ. Originating from the precipitation of rain-water : extremely hard, striking

ing fire with steel, and by triture yielding a very rough powder.

Order V. AGGREGATÆ. Originating from a mixture of the foregoing, the interfices usually filled up with quartz, spar, or glimmer.

GENERA OF STONES.

I. HUMOSÆ. Slaty Stones.

1. SCHISTUS. Slate. *Base*; vegetable mould: breaking into, *Fragments*; fissile, horizontal, plane, opaque, yielding to the knife, and combustible.

II. CALCAREÆ. Calcareous Stones.

2. MARMOR; Marble. *Base*; animal earth. *Fragments*; indeterminate, irregular, yielding to the knife. *Effervescing* with acids, though not completely soluble therein; but easily falling into lime.
3. GYPSUM. Plaister. *Base*; calcareous earth, saturated with acid. *Fragments*; indeterminate, irregular, yielding to the knife, component particles impalpable.

Fixed; not effervescing with
nor soluble in acids.

4. STIRIUM: Fibrous alabaster. *Base*; gypsaceous
earth.

Fragments; close, parallel,
yielding to the knife.

5. SPATUM. Spar. *Base*; calcareous earth, from
a dissolved state, formed
into,

Fragments; rhombeous,
plane, and polished.

III. ARGILLACEÆ. *Argillaceous Stones.*

6. TALCUM. Soap-earth. *Base*; indurated clay;
Particles; impalpable, yielding
to the knife, and
somewhat unctuous to
the touch; hardening
in the fire.

7. AMIANTUS. Asbest, earth-flax. *Base*; clayey;
Fragments; thready.

8. MICA. Talc. *Base*; clay from a dissolved
state, formed into,
Particles; membranaceous
shining, tough, sepa-
rable.

IV. ARENATÆ. *Sand Stones.* Free Stone.

9. COS. Whetstone. *Base*; sand conglutinated;
Fragments; irregular, sub-
opaque, striking fire
with

with steel : breaking
into,

Particles ; granulated.

10. QUARTZUM. Quartz. *Originating from water :*

*Fragments ; indeterminately
angular and acute ;*

*Particles ; uniform, and
pellucid.*

11. SILEX. Flint. *Base ; chalk or animal earth
conglutinated into an
uniform substance.*

*Fragments ; indeterminate,
but convex on one side,
and concave on the
other :*

Particles ; uniform.]

V. AGGREGATÆ. *Compound Stones.*

12. SAXUM. Rock-stone. *Base ; heterogeneous ;
compounded of par-
ticles of the foregoing
orders, variously con-
glutinated.*

SPECIES of STONES.

The PETRÆ are divided into five orders,

I. HUMOSÆ. Slaty Stones.

1. SCHISTUS. Slate. 13 species; among which are,

- | | |
|------------------------------------|---------------------------------------|
| 2. Tabularis ; <i>Table Slate.</i> | 5. Ardefia ; <i>Blue House Slate.</i> |
| 3. Atratus ; <i>Black Shale.</i> | 9. Nigrica ; <i>Black Crayon.</i> |

II. CALCARIÆ. Calcareous Stones.

2. MARMOR. Marble. 15 species.

- | | |
|---|--|
| 1. Schistofum ; <i>Black slaty Marble.</i> | 3. Florentinum ; <i>Florentine Marble.</i> |
| 2. Nobile ; <i>Parian Marble,</i>
and all its varieties
in colour and va-
riegation. | 6. Rude ; <i>White-grain Limestone.</i> |
| | 7. Micans ; <i>Scaly Lime-
stone.</i> |

3. GYPSUM. Plaister Stone. 3 species:

- | | |
|---|---|
| 2. Ufualē ; <i>Common Plai-
ster.</i> | 3. Alabastrum ; <i>Ala-
baster.</i> |
|---|---|

4. STIRIUM. Fibrous Alabaster. 4 species.

1. Gypseum ; *Fibrous Gypsum,* or English Talc.

5. SPATUM. Spar. 14 species.

a. Soluble in aqua fortis.

- | | |
|---|---|
| 1. Speculare ; <i>Soft Spar;</i>
of different colours. | 5. Compactum ; <i>Sub-dia-
phanous compact
Spar,</i> of different
colours. |
| 2. Duplicans ; <i>Refracting
Spar.</i> | |

6. Tinctum ;

- | | | |
|---|--|--|
| 6. Tinctum ; <i>Pellucid coloured Spar, as spu-</i> | | rious <i>Topaz, Emerald, Sapphire.</i> |
|---|--|--|

b. Not soluble in aqua fortis.

12. Campestre ; *Felt-Spat.*

III. ARGILLACEÆ. Argillaceous Stones.

6. TALCUM. Soap-earth, 12 species.

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|---|--|--|
| 3. Rubrica ; <i>Ruddle.</i> | | <i>Stone.</i> |
| 4. Smectis ; <i>French Chalk, Soap-earth.</i> | | 7. Nephriticus ; <i>Nephritic Stone.</i> |
| 6. Serpentinus ; <i>Serpent</i> | | 9. Corneus ; <i>Horn-blend.</i> |

7. AMIANTUS. Earth Flax. 10 species.

- | | | |
|--------------------------------------|--|-------------------------------------|
| 1. Asbestus ; <i>Asbestos.</i> | | 7. Suber ; <i>Mountain Cork.</i> |
| 2. Plumosus ; <i>Plumose Asbest.</i> | | 9. Aluta ; <i>Mountain Leather.</i> |

8. MICA. Talc. 10 species,

- | | | |
|--|--|----------------------------------|
| 1. Membranacea ; <i>Muscovy Glass.</i> | | 4. Aurata ; <i>Gold Glimmer.</i> |
| | | 7. Talcosa ; <i>Green Talc.</i> |

IV. ARENATÆ. Sand Stones.

9. Cos. Whetstone. 16 species.

- | | | |
|--------------------------------------|--|--|
| 1. Cotaria ; <i>Grind-stone.</i> | | 15. Molaris ; <i>Mill Stone.</i> |
| 10. Filtrum ; <i>Filtring Stone.</i> | | 16. Fundamentalis ; <i>Building Stone.</i> |

10. QUARTZUM. Quartz. 8 species.

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|--|--|---|
| 1. Hyalinum ; <i>Pellucid Rock Quartz.</i> | | 3. Lacteum ; <i>Milky Quartz.</i> |
| 2. Coloratum ; <i>Coloured Rock Quartz, yellow, red, blue, &c.</i> | | 6. Cotaceum ; <i>Granulated Quartz.</i> |
| | | 8. Nobile ; <i>Pebble Quartz.</i> |

11. SILEX.

II. SILEX. Flint. 16 species.

a. Vague or loose Flints.

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|--|--|
| 1. Cretaceus ; <i>Common Flint.</i> | 6. Opalus ; <i>Opal.</i> |
| 2. Pyromachus ; <i>Gun Flint.</i> | 7. Onyx ; <i>Cameyeu.</i> |
| 4. Hamachates ; <i>Ægyptian Pebble, Mocha Stone.</i> | 8. Chalcedonius ; <i>Chalcedony.</i> |
| | 9. Carneolus ; <i>Carne-
lian.</i> |

b. Rock Flints.

- | | |
|--------------------------------|-----------------------------|
| 10. Achates ; <i>Agate.</i> | 13. Jaspis ; <i>Jasper.</i> |
| 11. Petrofalex ; <i>Chert.</i> | |

V. AGGREGATÆ. Rock Stones. Compound Stones.

12. SAXUM. Rock Stone. 39 species.

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|--|--|
| 1. Porphyrius ; <i>Porphyry, of different colours.</i> | 19. Granite ; <i>Granite.</i> |
| 2. Trapezum ; <i>Trap Stone.</i> | 20. Fusorium ; <i>Founder's Granite.</i> |
| | 39. Silicinum ; <i>Pudding Stone.</i> |

These stones are composed of heterogeneous particles from the foregoing orders, conglutinated in a various manner.

Class II. MINERÆ. MINERALS.

Fossil bodies originating from a saline principle by chrySTALLIZATION,

Compound, as consisting of a base, united with saline, inflammable, or metallic principles,

Soluble, perfectly, in the appropriate menstruum.

Order

Order I. SALIA. Sapid bodies soluble in water : distinguished from each other by their different effects on the organs of taste.

Under this order are arranged, to the great offence of most mineralogists, all the *Gems* or precious stones, notwithstanding their texture and insolubility, as also many other lapidose chrystallized bodies. To this our author tells us he was led, by considering that all regular polyedrous figures or bodies in the mineral kingdom, are the result of chrystallization, which can only take place under requisite and certain degrees of fluidity ; and therefore, whether they are saline or lapidose chrystals, they must owe their figure to the same uniform principle operating on them in either case, while in the fluid state ; hence, from the similarity of the figure, with the chrystals of nitre, *Mountain Chrystal* hath a place in the same genus : the *Topaz* with the *Borax* : the *Diamond* and *Ruby* with *Alum*. LINNÆUS hath given his reasons more at large in a paper published in the first volume of the *Amœnitates Academicæ* : and hath since added "*Chrystallos quod* "*subjecerim salibus ne quemquam offendat mutet* "*vocem salis in chrystalli, si magis placeat, in* "*verbis erimus faciles.*"

Order II. SULPHURA. Inflammable bodies ; flaming and odorous while burning : soluble in oil : distinguished from each other by their different effect on the organs of smell.

Order III. METALLA. Metals ; shining heavy bodies, fusible in the fire, and soluble in appropriated acid menstrua : distinguished from each other by inspection.

GENERA

GENERA OF MINERALS.

I. SALIA. Salts or Chrystals.

13. NITRUM. Nitre. *Salt*: atmospherical, pungent;
A peculiar acid.

Chrystal: an hexaedral prism,
with hexaedral pyramids.

Taste: cold and pungent.

In the fire: fusible and de-
tonating.

14. NATRUM. Natron. *Salt*: calcareous, sub-
alkaline.

Chrystal: peculiar; a te-
traedra prism, of penta-
gonal planes, two broad
and two narrow, alter-
nately vertical: each
pyramid or extremity
forming two plane pa-
rallelograms.

Taste: bitter.

In the fire: liquefying.

15. BORAX. Borax. *Salt*: alkaline (*doubtful whe-
ther it is a natural salt.*)

Chrystal: octaedra prism,
prismatic; both pyramids
truncated.

(*Chrystal sometimes dif-
ferent.*)

Taste: mild.

In the fire: bubbling: vi-
rescent.

16. MURIA:

16. **MURIA.** Sea Salt. *Salt* : muriatic, neutral.
Crystal : hexaedra; or cubic.
Taste : austere.
In the fire : crackling.
17. **ALUMEN.** Alum. *Salt* : earthy, acid.
Crystal : octaedra, composed of trigonal planes.
Taste : styptic.
In the fire : frothing.
18. **VITRIOLUM.** Vitriol. *Salt* : metallic, acid, earthy.
Crystal : a polyedrous, rhombic tessera; but subject to variation.
Taste : styptic.
In the fire : calcinable.

II. SULPHURA. Inflammables.

19. **AMBRA.** Ambergrease. *The Sulphur* : inert.
Fume : In smell; ambrosiac.
In colour ; grey.
20. **SUCCINUM.** Amber. *The Sulphur* : inert.
Fume : In smell; sweet.
In colour ; brown.
21. **BITUMEN.** Bitumen. *The Sulphur* : inert.
Fume : In smell; unpleasant.
In colour ; black.
22. **PYRITES.** Sulphur. *The Sulphur* : charged with vitriol.
Fume : In smell; pungent and acid.
In taste ; salt.

In colour ; yellow.

Flame : blue.

Soluble ; in oil.

23. **ARSENICUM.** Arsenic. The *Sulphur* : metallic.

Fume : *In smell* ; like garlic.

In taste ; sweet.

In colour ; white.

Soluble ; in heated water, and other liquors.

III. METALLA. Metals.

a. *Semi-metals*, not malleable.

24. **HYDRARGYRUM.** Mercury. *Metal* : fluid, dry, white.

In the fire : volatilizing before ignition.

Solution : in aqua fortis, white.

25. **MOLYBDÆNUM.** Wadd. *Metal* : not fusible, grey, colouring the fingers. (*scarcely a metal.*)

In the fire : not fusible.

Solution :

Glass : sub-ferruginous coloured.

26. **STIBIUM,** Antimony. *Metal* : friable, white, fibrose.

In the fire : volatilizing after ignition.

Solution : in aqua regia, white.

Glass :

Glass : red with a yellow tinge.

27. ZINCUM. Zinc, Tutenag. *Metal* : somewhat malleable, but easily breaking ; blueish, white ; dull sound.

In the fire : melting before ignition, and burning with a yellowish green flame into a white light calx.

Solution : in aqua fortis, white.

28. VISMUTUM. Bismuth. *Metal* : somewhat malleable, but very fragile, laminose, yellowish white.

In the fire : fusible before ignition.

Solution : in aqua fortis, water coloured : in aqua regia, yellow.

Glass : yellowish brown.

29. COBALTUM. Cobalt. *Metal* : fragile, light grey.

In the fire : not fusible.

Solution : in aqua fortis and aqua regia, red.

Glass : blue.

b. Metals. Malleable.

30. STANNUM. Tin. *Metal* : easily malleable, white, crackling on flexure, not sonorous.

In

In

In the fire : fusible before ignition.

Solution : in aqua regia, yellow ; (in aqua fortis it dissolves, and precipitates into a white powder.)

Glass : white and opaline, difficultly produced.

31. PLUMBUM. Lead.

Metal : easily malleable, blueish-white : not sonorous.

In the fire : fusible before ignition.

Solution : in aqua fortis, clear water colour.

Precipitate : white.

Glass : yellow.

32. FERRUM. Iron.

Metal : very hard, and difficultly malleable ; obscure blueish grey colour : sonorous.

In the fire : not fusible till after ignition, and throwing off sparks in a stronger fire.

Solution : in aqua fortis, brown.

Glass : brown, with a slight greenish tinge.

33. CUPRUM. Copper.

Metal : hard, malleable, red, sonorous.

In the fire: fusing after ignition, with a green flame.

Solution: in aqua fortis, blue: in aqua regia, or the vegetable acids, green.

Glass: unmixed ferruginous coloured; otherwise of a bright blue.

34. ARGENTUM. Silver.

Metal: very malleable, bright white, sonorous, perfect, and indestructible.

In the fire: fusing after ignition.

Solution: in aqua fortis, white.

Glass: opaline.

35. AURUM: Gold:

Metal: extremely malleable, yellow, not sonorous, perfect, and indestructible.

In the fire: fusing after ignition, with a blueish hue.

Solution: in aqua regia, yellow.

Glass: purple.

SPECIES OF MINERALS.

The MINERÆ are divided into three Orders;

I. SALIA. Salts or Chrystals.

13. NITRUM. Nitre. 9 species.

a. Saline.

1. Nativum; *Native Salt Petre.*

b. Quartzose.

2. Chrystallus montana; *Mountain Chrystal.*

3. Fluor; Coloured Chrystal: from the varieties of which are

the true *Hyacinth*,
the false *Topaz*,
Ruby, *Amethyst*,
Sapphire, *Beryl*, *Emerald*.

c. Calcareous.

5. Truncatum; *Hexagonal, truncated Spar.*8. Suillum; *Sparry Swine Stone.*

14. NATRUM. Natron. 14 species.

a. Saline.

1. Antiquorum; *Native, mineral Alkali.*3. Fontanum; *Epsom Salt.*2. Murorum; *Aphronitrum.*

b. Lapidose.

6. Cristatum; *Spatose, decaedrous Natron.*9. Selenites; *Selenite; rhombic Natron.*8. Glaciale; *Gypseous, pellucid, fusiform Natron.*13. Hyodon; *Pyramidal, or Dog-tooth Spar.*

15. BORAX.

15. BORAX. Borax. 6 species.

a. Saline.

1. Tincal. *Native Borax.*

b. Lapidose.

- | | |
|---|---|
| <p>2. Gemma Nobilis ; <i>Lapidose, prismatic, pellucid Borax, with truncated pyramids :</i> yellow, <i>Topaz :</i> pale green, <i>Chrysolite :</i> sea green,</p> | <p><i>Beryl :</i> deep green, <i>Emerald.</i>
3. Basaltes ; <i>Cockle, or Skirl.</i>
4. Electricus ; the <i>Tourmalin.</i>
5. Granatus ; the <i>Garnet.</i></p> |
|---|---|

16. MURIA. Sea Salt. 9 species.

a. Saline.

1. Marina ; *Sea Salt.* | 3. Montana ; *Fossil Salt.*

b. Lapidose.

- | | |
|---|---|
| <p>6. Phosphorea ; <i>Bononian Stone.</i></p> | <p>7. Chrysolampis ; <i>Sperry Fluor, or Derbyshire Spar.</i></p> |
|---|---|

17. ALUMEN. Alum. 6 species.

a. Native.

1. Nativum ; *Native Alum, Plumose, &c.*

b. Soluble.

- | | |
|--|--|
| <p>2. Commune ; <i>Alum Slate.</i></p> | <p>3. Romanum ; <i>Stone Alum, or calcareous Alum Stone.</i></p> |
|--|--|

c. Lapidose.

- | | |
|--|--|
| 5. Spatosum ;
<i>Spatose</i>
<i>Alum, or false</i>
<i>Ametkyst.</i> | 6. Gemma pretiosa; <i>Dia-</i>
<i>mond, Ruby, Sap-</i>
<i>phire.</i> |
|--|--|

18. VITRIOLUM. Vitriol, 8 species.

a. Simple.

- | | |
|---------------------------------|----------------------------|
| 1. Martis ; of <i>Iron.</i> | 3. Album ; of <i>Zinc.</i> |
| 2. Cyprinum ; of <i>Copper.</i> | |

b. Compound.

- | | |
|--|---|
| 5. Triplum ; <i>Vitriol of</i>
<i>Iron, Zinc, and</i>
<i>Copper.</i> | <i>with friable Stone ;</i>
<i>such are, red Chal-</i>
<i>citis ; grey Sory ;</i>
<i>black Melanteria ;</i>
<i>yellow Misy.</i> |
| 8. Atramentarium ; <i>Vi-</i>
<i>triols mineralized</i> | |

c. Lapidose.

Tetraedrum ; *Spatose Vitriol of Zinc.*

II. SULPHURA. Inflammables.

19. AMBRA. Ambergrease. 2 species.

- | | |
|------------------------------|-------------------------------|
| 1. Ambrosiaca ; <i>Grey.</i> | 2. Vulgatiore ; <i>Brown.</i> |
|------------------------------|-------------------------------|

20. SUCCINUM. Amber.

- | | |
|--|--|
| 1. Electricum ; <i>Amber,</i>
<i>diaphanous,</i> o- | <i>pake, white, yel-</i>
<i>low, brown.</i> |
|--|--|

21. BITUMEN.

21. BITUMEN. Bitumen. 10 species.

- | | |
|-------------------------------|-----------------------------------|
| 1. Naptha; <i>Naphta.</i> | Coal, or Schistose |
| 2. Petroleum; <i>Rock</i> | Bitumen. |
| <i>Oil.</i> | 8. Gagas; <i>Fet.</i> |
| 3. Maltha; <i>Jews Pitch.</i> | 9. Suillum; <i>Calcareous fæ-</i> |
| 5. Asphaltum; <i>Fossil</i> | <i>tid Bitumen</i> , com- |
| <i>Pitch.</i> | compact, granulated, |
| 6. Ampelites; <i>Peat.</i> | squamosæ, spati- |
| 7. Lithanthrax; <i>Common</i> | form, chrySTALLINE. |

22. PYRITES. Sulphurs. 7 species.

- | | |
|---------------------------------|----------------------------------|
| 1. Nativum; <i>Native Sul-</i> | 4. Figuratus; <i>Figured Py-</i> |
| <i>phur.</i> | <i>rites.</i> |
| 2. Auripigmentum; <i>Or-</i> | 5. Ferri; <i>Iron Pyrites.</i> |
| <i>piment.</i> | 6. Cupri; <i>Copper Pyrites.</i> |
| 3. ChrySTALLINUS; <i>Chrys-</i> | 7. Aquosus; <i>Liver-co-</i> |
| <i>tallised Pyrites,</i> | <i>loured.</i> |
| <i>Marcasite.</i> | |

23. ARSENICUM. Arsenic. 8 species.

- | | |
|---------------------------------|---------------------------------|
| 1. Testaceum; <i>Solid tes-</i> | 5. Sulphuratum; <i>Arsen-</i> |
| <i>taceous Arsenic.</i> | <i>ical Marcasite.</i> |
| 4. Sandaraca; <i>Red Arse-</i> | 6. Albicans; <i>Mineralized</i> |
| <i>nic, mineralized</i> | <i>with Iron.</i> |
| <i>with Sulphur.</i> | |

III. METALLA. Metals.

24. HYDRARGYRUM. Quicksilver. 5 species.

- | | |
|--|---|
| 1. Virgineum ; <i>Native Quicksilver.</i> | lamellated, granulated, chrySTALLIZED. |
| 2. ChrySTALLinum ; <i>Cubic, chrySTALLIZED Quick-silver.</i> | 5. Crepitans ; pyritical, cupreous, <i>Stone Mercury.</i> |
| 3. Cinnabaris ; <i>Cinnabar,</i> | |

25. MOLYBDÆNUM. Black Lead. 3 species.

- | | |
|---|---|
| 1. Plumbago ; <i>Black Lead, or Wad, sulphur saturated with iron and tin.</i> | 2. Magnesia ; <i>Black Manganese.</i> |
| | 3. Spuma Lupi ; <i>Red Manganese, or Wolfram.</i> |

25. STIBIUM. Antimony. 4 species.

- | | |
|--|--|
| 1. Nativum ; <i>Native Regulus of Antimony.</i> | common Antimony. |
| 2. ChrySTALLinum ; <i>ChrySTALLIZED Stibium.</i> | 4. Rubrum ; <i>Red Antimony,</i> mineralized with Sulphur and Arsenic. |
| 3. Striatum ; <i>Fibrous or</i> | |

26. ZINCUM. Zinc. 8 species.

- | | |
|--|---|
| 1. ChrySTALLinum ; <i>ChrySTALLIZED Zinc.</i> | 3. Swabii ; <i>Mineralized with sulphurated Iron.</i> |
| 2. Mineralisatum ; <i>Mineralized, with Sulphur and Lead, or Iron.</i> | 4. Stibiatum ; <i>Fibrose Zinc.</i> |
| | 5. Calaminaris ; <i>Calamine ;</i> |

- | | |
|---|---|
| <p>mine ; Stone Zinc,
or Zinc mixed with
martial Ochre.</p> <p>6. Sterilum ; Blend ;
Mock-lead, black</p> | <p>Jack, or semi-tes-
felated black Zinc.</p> <p>8. Rapax ; Red Zinc, or
micaceous, liver-
coloured Zinc.</p> |
|---|---|

27. VISMUTUM. Bismuth. 4 species.

- | | |
|---|---|
| <p>1. Nativum ; Native
Bismuth.</p> <p>2. Commune ; Common
Bismuth, minera-
lized with Sul-
phur and Arsenic.</p> | <p>3. Martiale ; Martial Bis-
muth.</p> <p>4. Iners ; Bismuth, mine-
ralized with Sul-
phur only.</p> |
|---|---|

28. COBALTUM. Cobalt. 4 species.

- | | |
|---|--|
| <p>1. ChrySTALLINUM ; Chrys-
tallized Cobalt,
with Sulphur, Arse-
nic, and Iron.</p> <p>2. Arsenicale ; Minera-
lized with Arsenic.</p> | <p>and Iron.</p> <p>3. Pyriticosum ; Pyriti-
cose Cobalt.</p> <p>4. Scoriatum ; Slag-Co-
balt.</p> |
|---|--|

30. STANNUM. Tin. 4 species.

- | | |
|--|---|
| <p>1. ChrySTALLINUM ; Chrys-
tallized Tin, or Tin-
Grains.</p> | <p>3. Amorphum ; Tin Stone.</p> <p>4. Spatosum ; Spatose
Tin.</p> |
|--|---|

31. PLUMBUM. Lead. 10 species.

- | | |
|---|--|
| <p>1. Nativum ; Native
Lead.</p> <p>2. ChrySTALLINUM ; Cubic
Lead, chrySTALLIZED.</p> | <p>3. Galena ; Cubic Lead,
mineralized, with
sulphurated Sil-
ver, Galena.</p> |
|---|--|

5. Sti-

- | | |
|--|--|
| 5. Stibiatum ; <i>Stibiated</i>
<i>Lead Ore.</i> | 9. Spatosum ; <i>Sparry,</i>
<i>Arsenical Lead</i>
<i>Ore.</i> |
| 7. Virens ; <i>Greenish, Arse-</i>
<i>nical Lead Ore.</i> | |

32. FERRUM. Iron. 27 species.

A. 1. Nativum. *Native Iron*, in grains.

B. ChrySTALLIZED.

2. Tesselare. *ChrySTALLIZED Iron.*

C. Such as obey the magnet.

- | | |
|--|---|
| 4. Chalybeatum ; <i>Steel-</i>
<i>grained Iron Ore.</i> | 11. Molle ; <i>Pyriticose Iron</i>
<i>Ore.</i> |
| 8. Selectum ; <i>Fine grain-</i>
<i>ed Iron Ore.</i> | 12. Talcosum ; <i>Talky</i>
<i>Iron Ore.</i> |
| 10. Commune ; <i>Common</i>
<i>Iron Ore.</i> | 13. Calcarium ; <i>Calcare-</i>
<i>ous Iron Ore.</i> |
| | 17. Smiris ; <i>Emery.</i> |

D. Such as do not obey the magnet.

- | | |
|--|---|
| 18. Micaceum ; <i>Red mi-</i>
<i>ceaceous Iron Ore.</i> | 23. Rubricosum ; <i>Red</i>
<i>Blood-stone.</i> |
| 22. Hæmatites ; <i>Blood-</i>
<i>stone.</i> | 26. Spatosum ; <i>Spar-like</i>
<i>Iron Ore.</i> |

E. Magnetical,

27. Magnes ; *the Magnet.*

33. CUPRUM. Copper. 16 species.

- | | |
|---|---|
| 1. Præcipitatum ; <i>Cop-</i>
<i>per precipitated up-</i>
<i>on Iron.</i> | 2. Nativum ; <i>Native Cop-</i>
<i>per.</i> |
| | 3. ChrySTALLinum ; <i>Chryf-</i>
<i>tallized</i> |

- | | |
|--|--|
| <p><i>crystallized, octahedral Copper.</i></p> <p>4. <i>Fulvum ; Pyriticose, yellowish-green Copper Ore.</i></p> <p>5. <i>Purpureum ; Pyriticose, purple Copper Ore.</i></p> <p>6. <i>Vitratum ; Soft, pyriticose, grey Copper Ore.</i></p> <p>7. <i>Cinereum ; Sooty, pyriticose, arsenical Copper Ore.</i></p> <p>8. <i>Albidum ; White, arsenical, pyriticose Copper Ore.</i></p> <p>9. <i>Rubrum ; Indurated, ochraceous, red Copper Ore ; sometimes liver-coloured.</i></p> | <p>10. <i>Cotaceum ; Sandy, ochraceous Copper Stone.</i></p> <p>11. <i>Schistosum ; green, and blue Copper Slate.</i></p> <p>12. <i>Lazuli ; Lapis Lazuli ; doubtful, mixed with Silver and Iron.</i></p> <p>14. <i>Armenus ; Lapis Armenus ; blue calcareous Copper Stone.</i></p> <p>15. <i>Malachites ; Malachites ; green gypseous Copper Stone.</i></p> <p>16. <i>Nickelum ; Nickel, or Copper mineralized with Sulphur, Arsenic, and Iron.</i></p> |
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34. ARGENTUM. Silver. 9. Species.

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|---|---|
| <p>1. <i>Nativum ; Native Silver, in various forms.</i></p> <p>2. <i>Corneum ; Horn Silver Ore, shining, submalleable, and somewhat diaphanous, mineralized with Sulphur and Arsenic.</i></p> | <p>3. <i>Vitreum ; Glass Silver Ore, lead-coloured malleable Silver Ore, mineralized with Sulphur.</i></p> <p>4. <i>Rubrum ; Red Silver Ore, mineralized with Sulphur and Arsenic.</i></p> <p>5. <i>Album ; White Silver Ore,</i></p> |
|---|---|

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|---|---|
| <p>Ore, mineralized with Arsenic, Copper, and Sulphur.</p> <p>6. Cinereum; <i>Grey Silver Ore</i>, mineralized with Sulphur, Antimony, Copper, and Iron.</p> <p>7. Arsenicale; <i>Silver Ore</i>,</p> | <p>mineralized with <i>Arsenic and Iron</i>.</p> <p>8. Zincosum; <i>Silver Ore</i>, mineralized with Sulphur and Zinc.</p> <p>9. Nigrum; <i>Sooty Silver Ore</i>, mineralized with <i>Arsenic and Copper</i>.</p> |
|---|---|

35. AURUM. Gold;

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|--|-----------------------|
| <p>1. Nativum; <i>Native Gold</i>; found in</p> <p>a. In thin plates or leaves.</p> <p>b. Solid, or in thick pieces.</p> <p>c. In a chrystalline form.</p> | <p>various forms.</p> |
|--|-----------------------|

Gold is also found imbedded in Quartz, in Tale, and Cinnabar; and in Rivers, in loose grains and lumps, called Gold Dust.

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|---|-------------------------|
| <p>2. Mineralisatum; <i>Mineralized pyritical</i></p> | <p><i>Gold Ore</i>.</p> |
|---|-------------------------|

Class III. FOSSILIA. FOSSILS.

Fossil bodies, originated from different modifications of the subjects, comprehended in the foregoing classes.

Order I. PETRIFICATA. Such fossil bodies as represent in figure certain animals or vegetables, or parts thereof.

What are called Petrifications are of various kinds:

- I. The

1. The *true* petrifications are such as have the texture and *organic parts* of the bodies entirely filled up with stony particles, either of a *calcareous* nature, as is commonly the case: or *flinty*: and not unfrequently it is *marcasitical*.

2. *Preserved* only and unaltered, as seeming to have lost little except the animal gluten.

3. Others are only bodies *incrusted* with stalactite or calcareous matter. And,

4. Frequently they are only impressions received in their soft state.

Order II. **CONCRETA.** Slight conglutinations of different kinds of *earths*.

The specific differences of these bodies arise from the nature principally of the component parts, whether ochraceous, calcareous, gypsous, spatose, argillaceous, arenaceous, &c.

Order III. **TERRÆ.** Fossil substances not conglutinated, but usually in a slightly cohering or pulverized state.

GENERA of FOSSILS.

I. PETRIFICATA.

II. CONCRETA.

The generical characters of these two orders are very brief, and they occur in the subsequent arrangement of the species.

III. TERRÆ.

III. TERRÆ.

50. OCHRA. Ochres. *Earth*: precipitated calx or earth of metals.

Particles: coloured, and extremely minute.

51. ARENA. Sand. *Earth*: originated from water.

Particles: distinct, granulated, hard, and scabrous: neither penetrable nor conglutinable by water. (*Not soluble in acids.*)

52. ARGILLA. Clay. *Earth*: originated from the viscid sediment, or mud, of the sea.

Particles: irregular, impalpable, soft, tough, and lubricous.

In water: becoming soft, unctuous, and plastic.

In the fire: hardening.

53. CALX. Chalks. *Earth*: of animal origin.

Particles: dry, farinaceous, friable, colouring the fingers: tinging water: mostly soluble in acids, and effervescing therein, especially when calcined or burned.

54. HUMUS.

54. HUMUS. Mould. *Earth* : of vegetable origin.

Particles : dry, light, in the form of fine powder.

In water : swelling.

In fire : combustible, and leaving ashes.

SPECIES of FOSSILS.

The FOSSILIA are divided into three Orders.

I. PETRIFICATA. Figured or extraneous Fossils.

36. ZOOLITHUS. *Petrifications of Mammalia.*

- | | |
|---|--|
| <p>1. Hominis ; <i>Bones of Men</i> ; and in one instance of the whole body.</p> <p>2. Cervi ; remains of the <i>Cervus Tarandus</i>, or Rein Deer, dug up in Ireland.—</p> | <p>Vide <i>Lowthorp's Abridgment</i>, vol. ii. p. 432.</p> <p>3. Ebur Fossile ; <i>Fossil Ivory.</i></p> <p>4. Turcosa ; <i>Turquoise</i>, teeth tintured by Copper.</p> |
|---|--|

37. ORNITHOLITHUS. *Petrifications of Birds*, and their Nests.

These are scarce, and are usually *stalactitical incrustations* only.

38. AMPHI-

38. AMPHIBIOLITHUS. *Petrifications of Amphibia.*

- | | |
|--|--|
| <p>1. Testudinis ; <i>of an entire Tortoise.</i></p> <p>2. Ranæ ; <i>of a Toad.</i></p> <p>3. Lacertæ ; <i>Skeleton of a Crocodile.</i></p> <p>4. Serpentis ; <i>of an entire Serpent.</i></p> | <p>5. Nantis ; <i>of various Nantes, as of the Raja, Balistes, &c.</i></p> <p>6. Glossopetra ; <i>Sharks Teeth, very common.</i></p> |
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39. ICTHYOLITHUS. *Petrifications of Fishes.*

- | | |
|---|--|
| <p>1. Schisti ; <i>Entire Skeletons, with the Fins, in Slate, of several genera.</i></p> <p>2. Marmoris ; <i>in Marble,</i></p> | <p><i>of various genera.</i></p> <p>3. Bufonites ; <i>Grinding Teeth of the Anarchichas, or Wolf-fish.</i></p> |
|---|--|

40. ENTOMOLITHUS. *Petrifications of Insects.*

- | | |
|---|--|
| <p>1. Cancri ; <i>Petrified Crab, Lobster, &c.</i></p> <p>2. Paradoxus ; <i>of an unknown Insect ; perhaps a Monoculus.</i></p> | <p>3. Succineus ; <i>Insects inclosed in Amber, not proper petrifications.</i></p> |
|---|--|

41. HELMINTHOLITHUS. *Petrifications of Vermes.*

- | | |
|---|--|
| <p>1. Hammonites ; <i>Cornu Ammonis, various kinds.</i></p> <p>2. Orthocerotes ; <i>Straight Nautilus ; both these unknown in the recent state.</i></p> | <p>3. Conchidium ; <i>of an unknown bilocular shell ; perhaps a Patella.</i></p> <p>4. Anomites ; <i>of various Anomieæ, unknown in a recent state.</i></p> <p>5. Hyffe-</p> |
|---|--|

- | | |
|--|--|
| 5. Hyfterolithus. | kinds. |
| 6. Craniolaris. | 17. Entrochus. |
| 7. Gryphites. <i>Crow-stone.</i> | 18. Afteria Columnaris;
<i>Star Stones</i> ; parts
of an <i>Encrinus</i> , lately
discovered in
the recent state.—
See Phil. Transf.
vol. lii. p. 357. |
| 9. Judaicus; <i>Jews Stone</i> ,
thought to be
spines of <i>Echini</i> . | 23. Belemnites. |
| 10. Echinites. | |
| 14. Madreporus; <i>Madrepores</i> , of various | |

42. PHYTOLITHUS. *Petrifications of Plants.*

- | | |
|--|---|
| 1. Plantæ; <i>of the entire Plant, in Coal Slate.</i> | 5. Folii; <i>of Leaves</i> , in
Slate and Marble. |
| 2. Filicis; <i>of Ferns</i> , in
Slate. | 6. Antholithus; <i>of Flowers</i> , in Slate, re-
sembling the spike
of a <i>Phalaris</i> , or
Canary Grass. |
| 3. Rhizolithus; <i>of Roots</i> ,
in Marble. | 7. Carpolithus; <i>of Fruits</i> ,
in Coal strata;
commonly cones
of the Pine, Nuts,
Acorns, &c. |
| 4. Lithoxylon; <i>of Wood</i> ,
in various states;
as, of Limestone, of
Agate, of Flint, of
Sand-stone, and of
Slate. | |

43. GRAPTOLITHUS. *Stones resembling Pictures.*

8 species. Among which are,

- | | |
|---|---|
| 2. Ruderalis; <i>Florentine Marble or Slate</i> ,
representing ruins. | tions, insinuated
between the plates
of fissile stones, or
in Marble. This
process is now
well imitated by
art. |
| 3. Dendrites; represent-
ing woods, land-
scapes, &c. arising
from vitriolic solu- | |

II. CONCRETA. Concretes of various kinds.

44. CALCULUS. *Animal Concretions.* 8 species.

- | | |
|--|---|
| <p>1. Urinarius ; <i>Stone in the Kidney or Bladder.</i></p> <p>2. Salivalis ; <i>Tartar of the Teeth.</i></p> <p>3. Tracheæ ; <i>of the Lungs.</i></p> <p>4. Bezoar ; <i>Bezoar Stones, formed in the Abomasus, or fourth</i></p> | <p>stomach of the <i>Pecora</i>, or ruminating animals.</p> <p>5. Ægagropila ; <i>Hair Balls, formed in the first stomach.</i></p> <p>6. Felleus ; <i>Bile Stones.</i></p> <p>7. Margarita ; <i>Pearls.</i></p> <p>8. Oculus ; <i>Crabs Eyes.</i></p> |
|--|---|

45. TARTARUS. *Vegetable Concretes.*

- | | |
|-------------------------------|---|
| <p>1. Fæx ; <i>Yeast.</i></p> | <p>2. Vini ; <i>White and Red Tartar.</i></p> |
|-------------------------------|---|

46. ÆTITES. *Concretions within the Cavity of Stones.*

a. True Etites, having a loose Nucleus.

- | | |
|---|--|
| <p>1. Geodes ; <i>with an earthy Nucleus.</i></p> | <p>2. Aquilinus ; <i>with a stony Nucleus.</i></p> |
|---|--|

b. Spurious Etites.

- | | |
|---|---|
| <p>3. Hæmachates ; <i>Flinty Etites, with a fixed chrySTALLINE Nucleus, of quartzose nitre, or Melon of Mount Carmel.</i></p> | <p>4. Marmoreus ; <i>Marble Etites, including Dog-tooth Spar.</i></p> <p>5. Cretaceus ; <i>echinited Etites, including Fluor ChrySTALS.</i></p> |
|---|---|

47. PUMEX.

47. PUMEX. Concretions by Means of Fire.

- | | |
|---|---|
| 1. Vulcanii ; Black Slate
Pumice. | 5. Cinerarius ; Ashes of
Volcanos. |
| 2. Ferri ; White Pumice,
of Iron Furnaces. | 5. Molaris ; Rhenish Mill-
stone. |
| 3. Cupri ; Red Copper
Pumice. | 7. Vitreus ; Vitreous Pu-
mice, or black and
green Iceland Agate. |
| 4. Fuligo ; Soot. | |

48. STALACTITES. Concretions by Means of Air.

- | | |
|---|--|
| 1. Incrustatum ; Vege-
table Incrustations. | 7. Spatosus ; Solid spatose
Stalactite. |
| 2. Stillatitius ; Drop-
stone. | 9. Quartzosus. |
| 3. Solidus ; Solid marmo-
reous Stalactite. | 10. Pyriticosus. |
| 4. Flos Ferri ; Branched
marmoreous Stalac-
tite. | 11. Plumbiferus. |
| | 12. Zeolithus ; Red spa-
tose Stalactite or
Zeolite. |

49. TOPHUS. Concretions in Water. 22 species.

a. Metallic Tophs.

- | | |
|--|---|
| 1. Ludus ; Marly Toph-
stone. | 3. Marinus ; Sandy ochra-
ceous Sea Toph-stone. |
| 2. Pertusus ; Tubular,
marly, ochraceous
Toph-stone. | 5. Tubalcaini ; Bog Iron
Ore, in various
forms. |

b. Simple Tophs.

- | | |
|--------------------------------|--|
| 10. Aluminaris ; Alum
Toph. | 12. Lebetinus ; Concre-
tions of Tea Kettles. |
|--------------------------------|--|

- | | |
|--|---|
| 14. Oolithus ; <i>Pea-stone,</i>
of Hot Springs. | Transf. 1745, p.
378. |
| 16. Osteocolla ; <i>Bone-</i>
<i>binder.</i> Vide Phil. | 21. Lenticularis ; <i>Solid</i>
<i>black schistose Toph.</i> |

III. TERRÆ. Earths.

50. OCHRA. Ochres. Earths of Metals. 15 species.

a. In the form of Powder.

- | | |
|---|--|
| 1. Ferri ; <i>Ochre of Iron.</i> | 7. Plumbi ; <i>Native Ce-</i>
<i>russ.</i> |
| 3. Æris ; <i>Green Ochre of</i>
<i>Copper.</i> | 8. Cobalti ; <i>Ochre of Co-</i>
<i>balt.</i> |
| 4. Cupri ; <i>Blue Ochre of</i>
<i>Copper.</i> | |

b. Plumose, or germinating Ochres.

- | | |
|---|---|
| 12. Cuprigo ; <i>Copper</i>
<i>Blue, Plumose</i>
<i>Copper.</i> | 14. Argentigo ; <i>Plumose</i>
<i>Silver Ore, with</i>
<i>fulphurated Anti-</i>
<i>mony and Arse-</i>
<i>nic.</i> |
| 13. Stibigo ; <i>Flowers of</i>
<i>Antimony.</i> | |

51. ARENA. Sands. 14 species.

- | | |
|--|--|
| 1. Mobilis ; <i>Sea Sand.</i> | 11. Micacea ; <i>Micaceous</i>
<i>or Glittering Sand,</i>
<i>writing Sand.</i> |
| 2. Colorata ; <i>Coloured</i>
<i>Sands.</i> | 12. Aurea ; <i>Gold Sand.</i> |
| 6. Glarea ; <i>Sand of Heaths.</i> | 13. Ferrea ; <i>Iron Sand.</i> |
| 9. Sabulum ; <i>Common</i>
<i>Sand.</i> | 14. Silicea ; <i>Flint Sand.</i> |

52. ARGIL.

52. ARGILLA. Clays, Boles, Marles.

21 species.

a. Simple.

- | | |
|---|--|
| 1. Apyra; <i>Porcelain Clay.</i> | 8. Tripolitana; <i>Tripoli,</i>
or <i>Rotten Stone.</i> |
| 2. Leucargilla; <i>Tobacco-</i>
<i>pipe Clay.</i> | 9. Communis; <i>Brick</i>
<i>Clay.</i> |
| 3. Porcellana; <i>China Por-</i>
<i>celain Earth.</i> | 10. Figulina; <i>Potters</i>
<i>Clay.</i> |
| 6. Lemnia; <i>Lemnian</i>
<i>Earth.</i> | 13. Bolus; <i>Boles of diffe-</i>
<i>rent colours.</i> |
| 7. Fullonica; <i>Stone Mar-</i>
<i>row, Fullers Earth.</i> | |

b. Mixed.

- | | |
|--|---|
| 15. Tumescens; <i>Fer-</i>
<i>menting Clay.</i> | 18. Umbra; <i>Umbre.</i> |
| 17. Marga; <i>Marle.</i> | 19. Nilotica; <i>Marle of</i>
<i>the Nile.</i> |

53. CALX. Chalks. 9 species.

a. Soluble in acids.

- | | |
|---|--|
| 1. Creta; <i>Chalk.</i> | 3. Conchacea; <i>Shell</i>
<i>Chalk, or moulder-</i>
<i>ed Shells.</i> |
| 2. Marmorea; <i>Mineral</i>
<i>Agaric.</i> | |

b. Not soluble in acids.

- | | |
|---|---|
| 5. Palustris; <i>True Mi-</i>
<i>neral Agaric.</i> | 6. Gur; <i>Gypseous Gur,</i>
or <i>Lac Lune.</i> |
|---|---|

- c. Granulated, or sandy.
- | | |
|--|---|
| 7. Alabastrina; <i>Alabaster</i>
<i>Chalk.</i> | the Isle of Ascension. |
| 8. Testudinea; <i>Soluble</i>
<i>Arenaceous Calc</i> of | 9. Lenticularis; <i>Lenticular granulated Calc.</i> |
| 54. Hymus. Moulds. | 14 species. |
| 1. Dædalea; <i>Impalpable</i>
<i>Vegetable Mould.</i> | 5. Alpina; <i>Alpine Earth.</i> |
| 2. Ruralis; <i>Common Black</i>
<i>Mould.</i> | 6. Turfa; <i>Turf.</i> |
| 3. Pauperata; <i>Depauperated Mould of</i>
<i>Heaths.</i> | 7. Lutum; <i>Mould of</i>
<i>Lakes, Mud-mould.</i> |
| 4. Effervescens; <i>Spongy</i>
<i>Mould of Marshes.</i> | 10. Damascena; <i>Red</i>
<i>Mould.</i> |
| | 14. Animalis; <i>Animal</i>
<i>Mould.</i> |

Three very instructive tables, exhibiting different views of the several saline and other chrystallized bodies, are subjoined, accompanied by copious and methodical descriptions of the figures of each; and references to these bodies, as they occur in the work itself.

GENERA MORBORUM, or CLASSIFICATION of DISEASES.

WE must now look backwards a few years, to consider our author in another part of his Professorial character. It has been observed, that after his establishment at *Upsal*, one of his departments, as a professor, was that of teaching the *Diagnosis Morborum*; and to this end he drew up a system,

in which, as in natural history, all diseases were disposed into *classes, orders, and genera*, founded on distinctions taken from the *symptoms* alone, no regard being had either to remote, or proximate causes. Before we proceed to a particular view of LINNÆUS's method of classing diseases, it will be proper to premise, that a *nosology* on this plan, the great object of which is to fix *pathognomonics* to every disease, had been long wished for by some writers of the first character in the profession: such were Baglivi, Boerhaave, Gorter, Gaubius, and Sydenham; the latter of whom has thus expressed himself on this subject, in the preface to his works: "*Expe-*
dit ut morbi omnes ad definitas ac certas species revo-
centur, eadem prorsus diligentia ac ἀκριβείᾳ, qua
id factum videmus à botanicis scriptoribus in suis
phytologiis." Yet, amidst that almost infinite variety and complication of appearances which are seen in diseases, the difficulty of obtaining sufficient distinctions, by which the *genus* and *species* may be accurately discriminated, must be allowed to be very great; and possibly is in many instances unsurmountable. Hence, some of the most eminent physicians have been led to reject all such arrangements as futile, and impracticable. This, however, hath not deterred others from paying attention to the subject, more especially some of those, who, from their province as professors, are led to teach the rudiments of the art; and to whom method, in some form, is absolutely necessary. Systematic writers had used various methods in the disposition of their subject. Some

had chosen the *alphabetic*; if that deserves the name of an arrangement: others, after the example of *Aretæus*, and *Cælius Aurelianus*, had divided diseases, from their duration, into *acute*, and *chronical*. Some had preferred the *anatomical* order; which, as it presupposes a knowledge of the seat of the disease, must, not unfrequently, prove fallacious: *Sennertus*'s is an instance of this kind. However, the *ætiological* arrangement has been most followed by the best writers among the moderns; such as *Hoffmann*, and *Boerhaave*; although perhaps not much less fallacious than the anatomical, since it is in many instances founded on an hypothesis of the writer: and though *Felix Platerus*, in his *Praxis Medica*, published in 1602, had given an imperfect sketch of a nosology on the *symptomatic* plan, yet no writer ventured to pursue his idea, for more than a century after his time; discouraged as it should seem by the difficulty of the attempt. At length the late professor M. SAUVAGES of *Montpelier*, after communicating his scheme to *Boerhaave*, published in 1731, in 12^{mo}. the outlines of such a work, under the title of *Nouvelles Classes des Maladies*, in which he professes to define diseases, from *their constant and evident symptoms only*. In the year 1763, the author augmented his work, by the addition of the *species* under each *genus*, into 5 volumes in 8^{vo}. *Sauvages* may be considered as having spent his life in giving to this design a certain degree of perfection, having enlarged it into 2 quarto volumes, in which form it was published after his death in 1768.

1768: A work, it is to be presumed, now in the hands of most physicians.

It will easily be imagined, that an arrangement of this kind was too congenial to LINNÆUS to be neglected by him. In fact, it appears that he very early corresponded with *Sauvages* on this subject, that he soon adopted it, and framed a set of institutes, under the title of *GENERA MORBORUM*, as a basis of his lectures in this department. LINNÆUS's scheme was first published in a *thesis* in 1759; but he had taught it in his class for ten years preceding that time. In 1763, he published it himself in a small quarto; though we do not find that he ever enlarged it by the addition of the *species*.

The *symptomatic* plan of arranging diseases has since been followed by some other professors of physic; Dr. *Vogel* of *Göttingen* having published, in 1764, his *Definitiones Generum Morborum*. Dr. *Cullen* also, who at this time fills the practical chair at *Edinburgh* with such deserved reputation, has published a *Synopsis nosologiæ methodicæ*, and has made it the basis of his *First Lines of the Practice of Physic*. In 1776, Dr. *Sagar*, a physician at *Iglau* in *Moravia*, published a *Systema Morborum symptomaticum*. 8vo. *Vien.* pp. 756. His work, allowing for some alterations and additions, may be accounted an useful abridgement of *Sauvages's*: the author, all theory apart, has described the *species* under every *genus*, and subjoined the method of cure. Dr. *Cullen*, by omitting many *genera*, and reducing others to the rank of *species* only, has so considerably

considerably abridged the whole, as not to have retained more than half the number of *genera*, that the foregoing writers enumerate; and in this form he has published it, annexed to those of the four abovementiond, by which display of each, their several merits may be compared, and a judgment formed of the practicability, and use of the scheme in general, which, it must be confessed, affords a very ample field for cultivation; yet, from that reform which Dr. Cullen has already made in various parts, it is not, perhaps, too much to hope, that it is capable of receiving a much higher degree of improvement, in the hands of those whose genius and industry may prompt them to extend the design of these writers.

Of LINNÆUS's method we are led by our plan to exhibit a general view; to which end, although our prescribed brevity will not admit of giving his *definitions* at length, yet it will be necessary to enumerate the *names* of all his *genera*, since nothing short of a view of the whole collectively, could enable the reader to form a just idea of the author's scheme. Under each *class* we shall observe wherein LINNÆUS differs materially from *Sauvages*, and note the alterations which Dr. Cullen has made in the disposition of the same *genera*.

LINNÆUS, in the classification of diseases, has pretty nearly retained the arrangement of M. *Sauvages*, although he has altered his terms, and constituted one more class, with which he begins his method; the *Exanthematic*, or eruptive fevers, which, in the systems of *Sauvages* and Dr. Cullen,

form

form only an *order*, or subdivision of a class. He has also changed the order of the classes, and referred the *Vitia*, or *local external disorders*, which are principally the objects of surgery, to the end of his system. In this he has been followed by the two succeeding nosologists, Dr. *Vogel* and Dr. *Cullen*. The classical distribution is, however, confessedly not the *primary* consideration; that of fixing the *generical* character, and determining what shall constitute the *specific*, being the first object of every system. To this end a still farther reduction of the number of *genera* and *species*, will probably not a little contribute.

Class I. EXANTHEMATICI. Fevers attended with eruptions on the skin.

1. CONTAGIOSI. Contagious.

- | | |
|-----------------------------|--------------------------------|
| 1. Morra. Vesiculary Fever. | 5. Petechia. Spotted Fever. |
| 2. Pestis. The Plague. | 6. Siphylis. Venereal Disease. |
| 3. Variola. Small pox. | |
| 4. Rubeola. Measles. | |

2. SPORADICI. Sporadic fevers; not contagious.

- | | |
|-----------------------------|----------------------------|
| 7. Miliaria. Miliary Fever. | 9. Aphtha. Aphthous Fever. |
| 8. Uredo. Nettle Fever. | |

3. SOLITARIII. Affecting a part of the body only.

10. Erysipelas. St. Anthony's Fire.

In

In this class, as the disease is complicated of fever and eruption, the genus is defined from the nature of each. To instance, the *Variola*, or Small pox, is defined, "A disease attended with pustules of an erysipelatous, suppurating, escharotic kind; at length drying off, and leaving a cicatrix; accompanied by a fever of the ardent, and malignant kind, with head-ach and pain of the loins." The term *Pustula*, and the others in this class, expressive of the different kinds of eruption, have their definition in another part of the system. Such as appear in the Morta, are called *Pblyſenæ*; in the Pestis, *Anthraces*, or *Bubones*; in the Variola, *Pustulæ*; in the Rubeola, *Papulæ*; in the Petechia, *Sudamina*.

This class constitutes the first order of Dr. Sauvages's PHLEGMASIÆ, and the third of Dr. Cullen's PYREXIÆ class. In both, these genera are preserved nearly alike, except that the Morta of LINNÆUS is the *Pemphigus* of those authors, and the *Petechia* is considered by Dr. Cullen as only a symptom.

Our author stands alone in bringing the *Syphilis* into the febrile exanthematic class. He thinks himself justified, by considering it as attended, in the advanced state at least, by fever and eruptions. It certainly however ranks better with the IMPETIGINES.

Class

Class II. CRITICI. Critical Fevers.

1. CONTINENTES. Continual Fevers.

- | | |
|-----------------------------------|---------------------------------------|
| 11. Diaria. <i>Diary Fever.</i> | 13. Synochus. <i>Malignant Fever.</i> |
| 12. Synocha. <i>Ardent Fever.</i> | 14. Lenta. <i>Slow Fever.</i> |

2. INTERMITTENTES. Intermitting Fevers.

- | | |
|-----------------------------------|---------------------------------------|
| 15. Quotidiana. <i>Quotidian.</i> | 18. Duplicana. <i>Double Tertian.</i> |
| 16. Tertian. <i>Tertian.</i> | 19. Errana. <i>Erratic Fever.</i> |
| 17. Quartana. <i>Quartan.</i> | |

3. EXACERBANTES. Remitting Fevers.

- | | |
|--|--------------------------------------|
| 20. Amphimerina. <i>Continued Quotidian.</i> | 23. Hæmitritæa. <i>Semi-Tertian.</i> |
| 21. Tritæus. <i>Continued Tertian.</i> | 24. Hæctica. <i>Hæctic Fever.</i> |
| 22. Tetartophya. <i>Continued Quartan.</i> | |

The *Genera* of the CONTINENTES are determined from the different duration of each simply.

Those of the INTERMITTENTES from the duration of the intermissions.

The EXACERBANTES, supposed to be compounded of the two foregoing, have their characters accordingly.

Our author allows the *Tertian* to be the root of all the FEBRES CRITICI, although he has, in the foregoing division, kept pretty close to Dr.

Sauvages's

Sauvages's method in retaining the distinctions. In this they are not followed by *Dr. Cullen*, who denies the existence of a *continent* fever, and has greatly simplified this division, having reduced all the *CRITICAL fevers* to six genera, and allowing the *Hætic* to be *symptomatic* only.

Class III. PHLOGISTICI. Inflammations.

I. MEMBRANACEI. Membranous Inflammations.

- | | |
|---|--|
| <p>25. Phrenitis. Of the
Meninges of the
Brain.</p> <p>26. Paraphrenitis. Of
the Diaphragm.</p> <p>27. Pleuritis. The Pleu-
rify.</p> | <p>28. Gastritis. Of the Sto-
mach.</p> <p>29. Enteritis. Of the
Bowels.</p> <p>30. Proctitis. Of the Anus.</p> <p>31. Cystitis. Of the
Bladder.</p> |
|---|--|

2. PARENCHYMATICI. Visceral Inflammations.

- | | |
|--|---|
| <p>32. Sphacelismus. Of
the Brain.</p> <p>33. Cynanche. Quinsey.</p> <p>34. Peripneumonia. Of
the Lungs.</p> <p>35. Hepatitis. Of the
Liver.</p> | <p>36. Splenitis. Of the
Spleen.</p> <p>37. Nephritis. Of the
Kidneys.</p> <p>38. Hystritis. Of the
Uterus.</p> |
|--|---|

3. MUSCULORI Muscular, or external Inflam- mation.

- | | |
|--|-----------------------|
| <p>39. Phlegmone. In-
flammation of an</p> | <p>external part.</p> |
|--|-----------------------|

LINNÆUS

LINNÆUS defines the *Pblegmon* to be, "a tense
 " throbbing tumour, or enlargement of a part,
 " accompanied by fever, and attended with heat
 " and redness." This he considers as suggest-
 ing also the idea of all the foregoing internal in-
 flammations.

The generical character in the *Phlogistic* class of
 our author, does not arise wholly from the part
 affected supposed to be the seat of the disease,
 but from the *genus* of the attending fever also.
 Thus he defines "the *Hepatitis* to be the *Amphi-*
 " *merina*, attended with a difficult respiration,
 " cough without expectoration, hiccup, and a
 " sense of heat and tension in the right *hypo-*
 " *chondre*." "The *Nephritis* is a *Synochus*, attend-
 " ed with nausea, hiccup, eructation, urine vari-
 " ous, costiveness, burning lumbago, and numb-
 " ness down the thigh."

In this class LINNÆUS has followed *Sauvages* in
 dividing the diseases into MEMBRANACEI, and
 PARENCHYMATICI, a division neglected by Dr.
Cullen, from the difficulty of determining the seat
 of the inflammation.

The *Pblegmone*, being external, is ranked by
Sauvages among his VITIA. On the other hand,
 Dr. *Cullen* gives it the first place in his order PHLEG-
 MASIAE; and has reduced thirteen genera of LIN-
 NÆUS's, and twelve of *Sauvages*'s, to the rank of
species, under the term *Phlogosis*; further, account-
 ing *Abscess*, *Pustule*, *Gangrene*, and *Sphacelus*, as
 effects only of *Phlogosis*, and therefore not entitled

to

to the separate character of *genera*. Numerous instances of this kind afford a striking proof of the difficulties attending these arrangements, in determining what distinctions shall take place between *genus* and *species*.

Class IV. DOLORES. Painful Diseases.

I. INTRINSECI. Of the internal Parts.

- | | |
|---|--|
| 40. Cephalalgia. <i>Head-ach.</i> | 50. Colica. <i>Colic.</i> |
| 41. Hemicrania. <i>Megrim</i> , or pain of one side of the head only. | 51. Hepatica. <i>Pain of the right Hypochondre.</i> |
| 42. Gravedo. <i>Dull pain of the Forehead.</i> | 52. Splenica. — <i>of the left Hypochondre.</i> |
| 43. Ophthalmia. <i>Pain of the Eye.</i> | 53. Pleuritica. <i>Pain of the Side.</i> |
| 44. Otalgia. <i>Ear-ach.</i> | 54. Pneumonica. <i>Weight, or load on the Chest.</i> |
| 45. Odontalgia. <i>Tooth-ach.</i> | 55. Hystericalgia. <i>Pain of the Uterus.</i> |
| 46. Angina. <i>Pain in the Fauces, with a sense of choaking.</i> | 56. Nephritica. <i>Pain of the Kidneys.</i> |
| 47. Soda. <i>Burning pain in the Throat, with rancid Eructations.</i> | 57. Dysuria. <i>Pain in the Bladder.</i> |
| 48. Cardialgia. <i>Pain at the Heart.</i> | 58. Pudendagra. <i>Pain in the genital Parts.</i> |
| 49. Gastrica. <i>Pain of the</i> | 59. Proctica. <i>Pain of the Anus.</i> |

2. EXTRINSECI.

2. EXTRINSECI. Of the Limbs.

- | | |
|---------------------------------|----------------------------------|
| 60. Arthritis. <i>The Gout.</i> | 63. Volatica. <i>Flying Pain</i> |
| 61. Ostocopus. <i>Fixed</i> | <i>of the Limbs.</i> |
| <i>Pain in the Bones.</i> | 64. Pruritus. <i>Excessive</i> |
| 62. Rheumatismus. <i>The</i> | <i>Itching.</i> |
| <i>Rheumatism.</i> | |

Our author does not take into the characters of these *genera* the idea of fever; and there are several of them used by him as auxiliary terms, in the definition of other *genera*.

Dr. *Sauvages* has a class of five orders under the term DOLORES, disposed in the anatomical method; under which, most of the foregoing *genera* are comprehended.

Dr. *Cullen* having no such class as the DOLORESI, is necessarily led to arrange these *genera* in different parts of his system; but, with him, the greater number are either *species* only, or symptoms, he having admitted only three to the character of *genera*, in his PHLEGMASIA. These are the *Ophthalmia*, *Arthritis* or *Podagra*, and *Rheumatismus*.

Class V. MENTALES. Diseases in which the Functions of the Mind are disturbed.

I. IDEALES. Those in which the Judgment is principally affected.

- | | |
|--|---|
| 65. Delirium. <i>Symptomatic, or febrile</i> | 66. Paraphrosyne. <i>Transitory Insanity without Fever.</i> |
| <i>Delirium.</i> | |

N

67. Amentia.

- | | |
|--|---|
| 67. Amentia. <i>Idiotic
Insanity.</i> | 70. Vefania. <i>Tranquil,
partial Melancholy.</i> |
| 68. Mania. <i>Madness.</i> | 71. Melancholia. <i>Fixed
Melancholy.</i> |
| 69. Demonia. <i>Melan-
choly, with Idea of
Possession.</i> | |

2. IMAGINARIII. Those in which the Imagination is principally affected.

- | | |
|--|--|
| 72. Syringmos. <i>Imagi-
nary Sound in the
Ear.</i> | 75. Panophobia. <i>False
fear of Evil.</i> |
| 73. Phantasma. <i>False
Vision.</i> | 76. Hypochondriasis. <i>Hypochondriac Dis-
ease.</i> |
| 74. Vertigo. <i>Giddiness,
or false Idea of
Gyration in Objects.</i> | 77. Somnambulismus. <i>Night-walking, or
Noctambulation.</i> |

3. PATHETICI. Those in which the Appetites and Passions are principally affected.

- | | |
|--|---|
| 78. Citta. <i>Unnatural
Longings.</i> | 85. Rabies. <i>Canine Mad-
ness.</i> |
| 79. Bulimia. <i>Voracious
Appetite.</i> | 86. Hydrophobia. <i>Hor-
ror of Drinking,
with Rigor and
Sardiasis.</i> |
| 80. Polydipsia. <i>Exces-
sive Thirst.</i> | 87. Cacofitia. <i>Fixed A-
version to Food.</i> |
| 81. Satyriasis. | 88. Antipathia. <i>Aversion
to particular Objects.</i> |
| 82. Erotomania. | 89. Anxietas. <i>Restlessness.</i> |
| 83. Nostalgia. <i>Swiss Ma-
lady.</i> | |
| 84. Tarantismus. | |

In

In this class, which answers to the *VESANIÆ* of Dr. *Sauvages*, the genera stand nearly the same as in that author's arrangement.

They constitute, after great reduction, the fourth order, under the term *VESANIÆ*, of the class *NEUROSES*, in Dr. *Cullen's* system, comprehending four genera.

Of the *IDEALES* of *LINNÆUS*, Dr. *Cullen* only ranks the *Amentia*, the *Mania*, and the *Melancholia*, as genera; the *Delirium* and *Paraphrosyne* being symptomatic. The *Demonia*, *Vesania*, and *Panophobia*, rank with *Melancholy*; under which he has also brought the *Erotomania* and *Nostalgia*, from the *PATHETICI*. Of the remaining genera only the *Hypochondriasis*, and the *Hydrophobia*, are admitted as such; the former in the *ADYNAMIÆ*, and the latter among the *SPASMI*. The *Syrismus*, and *Phantasma*, are referred to the *LOCALES* class; and the *Somnambulismus* to the *Oneirodynia*; in the order *VESANIÆ*. The *Citta*, or *Pica*, the *Polydipsia*, *Satyriasis*, and *Bulimia*, belong also to the *LOCALES*, in the order *DYSOREXIÆ*. It is justly doubted whether the *Tarantismus* exists; and the *Rabies* can scarcely be separated from the *Hydrophobia*.

Class VI. *QUIETALES*. Diseases in which the voluntary, and involuntary Motions; and the Senses, suffer a Diminution.

I. *DEFECTIVI*. Defects of the vital Powers.

90. Lassitudo. Muscular Debility.	91. Languer. Debility of Spirits.
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N 2

92. Asthenia.

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|--|--|
| <p>92. Asthenia. <i>Extreme Debility.</i></p> <p>93. Lipothymia. <i>Fainting.</i></p> <p>94. Syncope. <i>Swooning.</i></p> | <p>95. Asphyxia. <i>Long failure of vital and animal Power; as from Drowning, Mephitism, &c.</i></p> |
|--|--|

2. Soporosi. Soporose Affections; or Diminution of Sense and Motion.

- | | |
|---|---|
| <p>96. Somnolentia. <i>Somnolency.</i></p> <p>97. Typhomania. <i>Coma Vigil, of authors.</i></p> <p>98. Lethargus. <i>Lethargy; febrile Somnolency.</i></p> <p>99. Cataphora. <i>Coma Somnolentum, of authors.</i></p> <p>100. Carus. <i>Sopor and Insensibility, with quiet Respiration.</i></p> | <p>101. Apoplexia. <i>Apoplexy; Sopor, and Insensibility, with Snoring.</i></p> <p>102. Paraplegia. <i>Palsy, of all the Limbs.</i></p> <p>103. Hemiplegia. <i>Palsy, of one Side.</i></p> <p>104. Paralysis. <i>Palsy, of a particular Part.</i></p> <p>105. Stupor. <i>Transitory Numbness.</i></p> |
|---|---|

3. PRIVATIVI. Diminutions of the Senses.

- | | |
|---|--|
| <p>106. Morosis. <i>Defect of Imagination.</i></p> <p>107. Oblivio. <i>Defect of Memory.</i></p> <p>108. Amblyopia. <i>Obscure Vision, without apparent Defect in the Organ.</i></p> <p>109. Cataracta. <i>Privation of Sight, with</i></p> | <p><i>apparent Defect in the Organ.</i></p> <p>110. Amaurosis. <i>Privation of Sight, without apparent Defect of the Organ.</i></p> <p>111. Scotomia. <i>Transitory Blindness.</i></p> <p>112. Cophosis. <i>Deafness.</i></p> <p>113. Anosmia.</p> |
|---|--|

- | | |
|--------------------------------------|---|
| 113. Anosmia. Defect of
Smelling. | 118. Anæsthesia. Defect
of Feeling. |
| 114. Ageusia. Defect of
Taste. | 119. Atecnia. Defect of
venereal Appetite. |
| 115. Aphonia. Defect of
Voice. | 120. Atonia. Atony;
Defect of muscular
Power. |
| 116. Anorexia. Want of
Appetite. | |
| 117. Adipsia. Want of | |

The diseases of this class very nearly correspond with the DEBILITATES of *Sauvages*; and the two first orders, the DEFECTIVI and SOPOROSI, with the COMATA and ADYNAMIÆ, of the class NEUROSES, in Dr. Cullen's system.

The three first genera of the DEFECTIVI, Dr. Cullen takes no notice of; the three last he includes under his *Syncope*, as different degrees only of the same diminished power of the functions.

Among the SOPOROSI of our author, Dr. Cullen ranks the *Carus* and *Cataphora* under the *Aplexia*; and also considers the *Typhomania* and *Lethargus*, as symptomatic of the same. For the like reasons he accounts the *Paraplegia*, and *Hemiplegia*, as different degrees of the same disease, including them all under *Paralysis*.

The PRIVATIVI rank under the two first orders of Dr. Cullen's LOCALES, as far as he allows them to hold the character of genera. The *Morosis* and *Oblivio* he refers to his *Amentia*. The *Scotomia* he does not notice. The *Copiosis* he calls *Dysfecia*; the *Anorexia* stands under his *Dyspepsia* genus,

genus, among the ADYNAMIÆ; the *Atonia* as a species of *Palsy*. The *Amblyopia* under *Amaurosis*; the *Cataracta* under his *Caligo*. The *Anosmia*, *Ageusia*, *Aphonia*, *Anosxia*, *Adipsia*, and *Anæsthesia*, under their respective names separately; and the *Atecnia* under that of *Anaphrodisia*.

Class VII. MOTORII. Spasmodic Diseases;
Diseases attended with involuntary Motion.

I. SPASTICI. Spastic, or Tonic Diseases.

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|--|---|
| 121. Spasmus. <i>Cramp</i> . | 127. Tetanos. <i>Rigidity of the Spine, with Sensibility.</i> |
| 122. Priapismus. <i>Priapism.</i> | 128. Catochus. <i>Rigidity of the Body without Sensibility.</i> |
| 123. Borborygmi. <i>Rumbling of the Bowels.</i> | 129. Catalepsis. <i>Catalepsy.</i> |
| 124. Trismus. <i>Locked Jaw.</i> | 130. Agrypnia. <i>Intense Watching. The Pervigilium of Authors.</i> |
| 125. Sardiasis. <i>Involuntary or convulsive Laughing.</i> | |
| 126. Hysteria. <i>Hysterical Affection.</i> | |

2. AGITATORII. Convulsive or Clonic Diseases.

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|---|--|
| 131. Tremor. <i>Trembling, without the Sensation of Cold.</i> | 134. Subsultus. <i>Twitching of the Tendons.</i> |
| 132. Palpitatio. <i>Palpitation of the Heart.</i> | 135. Carpologia. <i>Delirious Fumbling.</i> |
| 133. Orgasmus. <i>Subsultus of the Arteries.</i> | 136. Stridor. <i>Grating of the Teeth.</i> |
| | 137. Hippos. |

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|---|--|
| 137. Hippos. <i>Morbid
Nictitation.</i>
138. Pselismus. <i>Stam-
mering.</i>
139. Chorea. <i>St. Vitus's
Dance.</i>
140. Beriberi. <i>Tre-
mor of the Limbs
and Body, with
contracted Knees,
attended with Stu-
por and Hoarseness.</i>
141. Rigor. <i>Shaking or
Tremor, with a
Sense of Cold.</i> | 142. Convulsio. <i>Convul-
sion.</i>
143. Epilepsia. <i>Epilepsy.
Convulsions attend-
ed with Insensibility,
opposed to the
foregoing.</i>
144. Hieranosos. <i>Conti-
nued Convulsions
without Pain, or
Loss of Sensibility.</i>
145. Raphania. <i>Spastic
Contraction of the
Limbs, with Con-
vulsions and Pain.</i> |
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Most of the diseases of this class stand in the corresponding one of *Sauvages*, called SPASMI, except the *Borborygmus*, and the *Agrypnia*, the latter of which is referred to the anomalous VESANIÆ. He also considers the *Sardiasis* and *Stridor* of LINNÆUS as species only of the *Trismus*; and the *Subsultus* he calls *Carpologia*.

In Dr. Cullen's system the MOTORII of LINNÆUS make the third order of his NEUROSES, called SPASMI. Of the *Spastici* he has the *Trismus*, *Hysteria*, and *Tetanos*, only as distinct genera, under their respective terms. The *Catocbus* he refers to the *Tetanos*, and the *Catalepsis* is his *Apoplexia Cataleptica*. The others are not noticed by him.

Of the AGITATORII, the Tremor Dr. Cullen accounts rather as a symptom of various disorders. The *Beriberi*, which he had heretofore ranked with

the *Paralysis*, he has omitted in the last edition of his *Synopsis*: the *Chorea* is admitted as a genus, and the *Hieranosos* stands under the idiopathic *Convulsio*. The *Psellismus* is removed to the *LOCALES* class; and of the remainder, the *Palpitatio*, *Epilepsia*, and *Raphania* only, retain their place in his system, under their respective names.

Class VIII. SUPPRESSORII. Affections and Diseases arising from, or attended with Oppression of the Organs, and impeded Excretions.

I. SUFFOCATORII. Diseases attended with a Sense of Suffocation.

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|---------------------------------------|---|
| 146. <i>Raucedo.</i> Hoarseness. | <i>Respiration from Narrowness of the Fauces.</i> |
| 147. <i>Vociferatio.</i> Squealing. | 159. <i>Empyema.</i> — from an Abscess in the Thorax. |
| 148. <i>Risus.</i> Laughing. | 160. <i>Dyspnœa.</i> Laborious, panting Respiration, without a Sense of Narrowness in the Fauces. |
| 149. <i>Fletus.</i> Weeping. | 161. <i>Asthma.</i> Chronic, laborious, wheezing Respiration. |
| 150. <i>Suspirium.</i> Sighing. | 162. <i>Orthopnœa.</i> Acute, sighing, suffocating Respiration. |
| 151. <i>Oscitatio.</i> Yawning. | 163. <i>Ephialtes.</i> Nightmare. |
| 152. <i>Pandiculatio.</i> Stretching. | |
| 153. <i>Singultus.</i> Hiccup. | |
| 154. <i>Sternutatio.</i> Sneezing. | |
| 155. <i>Tussis.</i> Coughing. | |
| 156. <i>Stertor.</i> Snoring. | |
| 157. <i>Anhelatio.</i> Panting. | |
| 158. <i>Suffocatio.</i> Difficult | |

2. CON-

2. CONSTRICTORII. Diseases attended with Constriction.

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| 164. Aglutitio. <i>Impeded Deglutition.</i>
165. Flatulentia. <i>Flatulence.</i>
166. Obstipatio. <i>Constiveness.</i>
167. Ischuria. <i>Impeded or suppressed Micturition.</i> | 168. Dysmenorrhœa. <i>Suppression of the Menses.</i>
169. Dyslochia. <i>Suppression of the Lochia.</i>
170. Aglactatio. <i>Defect of Milk.</i>
171. Sterilitas. <i>Barrenness.</i> |
|--|---|

Under the *genera* of the SUFFOCATORII our author has departed from his usual rule, in having subjoined to each a note expressive of the intention of Nature in exciting these affections. Thus, to instance, after defining *Suspirium* to be “*a deep, slow, agitating inspiration,*” he adds, that the effect is, “*that of expelling the blood from the lungs.*” Most of the SUFFOCATORII have a place in *Sauvages’s* system among the ANHELATIONES, but the CONSTRICTORII are scattered in various parts of his system.

Dr. *Cullen* hath not introduced into his system the lighter affections under the SUFFOCATORII; which seem to have been defined and explained by LINNÆUS, principally to use them as auxiliaries in other parts of the work.

In Dr. *Cullen’s* system the *Raucedo* has a place, as symptomatic only, under the Catarrh; and again, in another part, as a species of *Paraphonia*.

phonia. The *Tussis* is also received under the *Catarrh*; and the *Empyema* is considered as a consequence of *Pleurisy* or *Peripneumony*. The *Orthopnœa*, as a *genus*, is not noticed by Dr. Cullen. The *Dyspnœa* is admitted in the last edition, which, with the *Asthma*, are the only *genera* he receives from this *order*, as he has made the *Ephialtes* a species of his *Oneirodynia*, under the *VESANIÆ* in the class *NEUROSES*.

In the *CONSTRICTORII* order, the *Flatulentia* of LINNÆUS comes under the *Dyspepsia* of Dr. Cullen; and the *Obstipatio*, *Ischuria*, and *Dysmenorrhœa*, enter into the fourth order of the *LOCALS*, called *EPISCHESES*; the latter under the term *Amenorrhœa*.

Class IX. EVACUATORII. Diseases attended with increased Excretion and Discharges.

1. CAPITIS. Of the Head.

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| 171. Otorrhœa. <i>Purulent Discharge from the Ear.</i> | 174. Coryza. <i>Mucous Discharge from the Nose.</i> |
| 172. Epiphora. <i>Lachrymal Flux.</i> | 175. Stomocace. <i>Bleeding of the Gums.</i> |
| 173. Hæmorrhagia. <i>Bleeding of the Nose.</i> | 176. Ptyalismus. <i>Salivation.</i> |

2. THORACIS. Of the Breast.

- | | |
|---|---|
| 177. Screatus. <i>Hawking.</i> | 179. Hæmoptysis. <i>Spitting of Blood, with Coughing.</i> |
| 178. Expectoration. <i>Expectoration.</i> | |
| | 180. Vomica, |

180. Vomica. *Purulent Discharge from the Lungs.*

3. ABDOMINIS. Of the Belly.

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|---|---|
| 181. Ructus. <i>Eruetion.</i> | 189. Cœliaca. <i>Dejection of Chyle.</i> |
| 182. Nausea. <i>Nausea.</i> | 190. Cholera. <i>Bloody Flux, without Colic.</i> |
| 183. Vomitus. <i>Vomiting.</i> | 191. Dysenteria. <i>Bloody Flux, with Colic and Tenesmus.</i> |
| 184. Hæmatemesis. <i>Vomiting of Blood.</i> | 192. Hæmorrhoids. <i>Bleeding Piles.</i> |
| 185. Iliaca. <i>Iliac Passion.</i> | 193. Tenesmus. <i>Needling and frequent Dejection of Mucus.</i> |
| 186. Cholera. <i>Vomiting, with Colic and Purging.</i> | 194. Crepitus. <i>Dejection of Flatus.</i> |
| 187. Diarrhœa. <i>Dejection of liquid Fæces.</i> | |
| 188. Lienteria. <i>Dejection of undigested Aliment.</i> | |

4. GENITALIUM. Of the Genital Passages.

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|---|---|
| 195. Enuresis. <i>Involuntary Micturition.</i> | 201. Leucorrhœa. <i>Whites.</i> |
| 196. Stranguria. <i>Strangury.</i> | 202. Menorrhagia. <i>Inordinate Flux of the Menses.</i> |
| 197. Diabetes. <i>Diabetes.</i> | 203. Parturitio. <i>Laborious Parturition.</i> |
| 198. Hæmaturia. <i>Bloody Urine.</i> | 204. Abortus. <i>Abortion.</i> |
| 199. Glus. <i>Mucous Urine.</i> | 205. Mola. <i>False Conception.</i> |
| 200. Gonorrhœa. <i>Gleet. Mucous Flux from the Urethra.</i> | |

5. CORPORIS

5. CORPORA EXTERNA. Of external Parts.

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|--|-------------------------------------|
| 206. Galactitia: Over-
flowing of Milk. | 207. Sudor. Inordinate
Sweating. |
|--|-------------------------------------|

This class stands nearly the same as our author found it in *Sauvages's* arrangement, under the term FLUXUS; except that LINNÆUS has introduced three or four genera not in that author; such are the *Screatus*; *Vomica*, which is a species of *Sauvages's* *Anacatharsis*; the *Rufus*; *Glus*, a species of his *Pyuria*; *Parturitio*, and *Mola*. He has also taken his orders from the anatomical division of the parts; whereas *Sauvages* divides them according to the nature of the discharge, whether bloody or serous, which must be allowed to be equivocal in many instances. It has been objected, that *Parturitio* is not a disease; LINNÆUS however seems only to consider it as such when it proves laborious, protracted, or unnatural.

Dr. Cullen does not admit more than about a third part of the diseases of this class into his system. He has the *Epiphora*, *Ptyalismus*, *Enuresis*, and *Genorrhœa*, under their respective names, in an order, called APOCENOSES, belonging to the class LOCALES. *Hæmorrhagia* is synonymous to his *Epistaxis*; *Coryza* to his *Catarrhus*; under which he considers *Expectoratio* as only symptomatic; and *Vomica* as the effect of Pleurisy, or Peripneumony. *Nausea*, and *Vomitus*, come under *Dyspepsia*; the *Îliaca*, under *Colica*; the *Cholerica*, *Cæliaca*, and *Lienteria*, as different species of *Diarrhœa*;

rhæa; *Leucorrhæa*, and *Abortus*, under *Menorrhagia*; *Stomacace*, *Hæmatemesis*, and *Hæmaturia*, as symptomatic only. *Hæmoptysis*, *Cholera*, and *Hæmorrhoids*, form distinct genera in both systems.

Class X. DEFORMES. Diseases occasioning external Deformity of the Body.

1. EMACIANTES. [Such as emaciate the Body.

208. *Phthisis. Consumption.* Wasting with hectic Fever, Dyspnoea, and purulent Expectoration.

pectoration,
211. *Marasmus.* Wasting, without Atony, Hectic, or Expectoration.

209. *Tabes.* Wasting, with hectic Fever, but without Expectoration.

212. *Rachitis. Rickets.* Wasting of the Flesh, with Enlargement of the Head and Joints, attended sometimes with Flexility of the Bones.

210. *Atrophia. Atrophy.* Wasting, with Atony, without Hectic, or Ex-

2. TUMIDOSI. [Such as enlarge the Body, or Parts thereof.

213. *Polyfarcia. Corpulency.*

tose Intumescence.

214. *Leucophlegmatia.*
Emphysematose Intumescence.

216. *Hydrocephalus.*
Oedematose Enlargement of the Head, with Gaping of the Sutures.

215. *Anasarca. Oedema.*

217. *Ascites.*

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| <p>217. Ascites. <i>Dropfy</i>;
Oedematous En-
largement of the
Abdomen.</p> <p>218. Hypofarca. <i>Fixed</i>,
partial Tumour of
the Abdomen.</p> | <p>219. Tympanites. <i>Wind-
Dropfy</i>.</p> <p>220. Graviditas. Extra-
ordinary Distention
of the Abdomen du-
ring Pregnancy.</p> |
|--|--|
3. DECOLORES. Such as deform, and change
the Colour of the Skin.
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|---|---|
| <p>221. Cachexia. <i>Cachexy</i>.
Oedematose Pale-
ness.</p> <p>222. Chlorosis. <i>Green-
sickness</i>.</p> <p>223. Scorbutus. <i>Scurvy</i>.</p> | <p>224. Icterus. <i>Jaundice</i>.</p> <p>225. Plethora. <i>Redness
of the Skin from
Fullness of Blood,
attended with Dys-
pnea</i>.</p> |
|---|---|

This class answers to the *CACHEXIÆ* of *Sauvages*, and *Dr. Cullen*; and most of the genera are admitted into the system of the latter under three corresponding orders also. The *Marasmus* is not distinguished by *Dr. Cullen* from the *Atrophy*. The *Phthisis* has been classed before as the consequence of *Hæmoptysis*. The *Chlorosis* stands in the *ADYNAMIÆ* order, in the class *NEUROSES*. The *Graviditas*, *Cachexia*, and *Plethora*, have no place in *Dr. Cullen's* system.

Class XI. *VITIA*. Cutaneous, external, or pal-
pable Diseases.

The class which corresponds to this in the *Sauvagesian* system, stands first under the same term, and

and is there professedly intended to contain such disorders as are more immediately the objects of surgery. This character is not so strictly applicable to that of LINNÆUS's, or of Dr. Cullen's LOCALES, since both these contain *genera* which come under the province of the physician, independent of manual operation or assistance. In all the systems it is the most comprehensive class. The congruity of the orders will be noted in our progress through the class.

I. HUMORALIA. Diseases attended with vitiated, or extravasated Fluids.

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| 226. Aridura. <i>Wasting and withering of a Part, or Limb.</i> | 230. Sugillatio. <i>Ecchymosis.</i> |
| 227. Digitum. <i>Dry Whitlow.</i> | 231. Inflammatio. <i>Inflammation.</i> |
| 228. Emphysema. <i>Windy Tumour.</i> | 232. Abscessus. <i>Abscess.</i> |
| 229. Oedema. <i>Watery Tumour.</i> | 233. Gangræna. <i>Gangrene.</i> |
| | 234. Sphacelus. <i>Mortification.</i> |

In the *genera* of this order, the appearance of the external part, and that of the contained fluid, conjointly form the character.

In *Sauvages* the *Aridura*, *Gangræna*, and *Sphacelus*, or *Necrosis*, belong to his class of CACHEXIÆ. The *Digitum* is a species of his *Paronychia*, and stands with the remaining *genera* of this order among the VITIA.

Dr.

Dr. Cullen neglects the *Aridura* and *Digitum*; the *Emphysema* is his *Pneumatosis*; the *Sugillatio* his *Ecchymoma*; and the four remaining genera of LINNÆUS come under his *Phlogosis*.

2. DIALYTICA. Solutions of Continuity;
Fractures, Wounds, &c.

235. Fractura. <i>Fracture</i> ; and,	242. Laceratura. <i>Laceration</i> .
236. Luxatura. <i>Dislocation of a Bone</i> .	243. Punctura. <i>Puncture of a Tendon</i> .
237. Ruptura. <i>Rupture of a Tendon</i> .	244. Morfura. <i>A Venomous Bite</i> .
238. Contusura. <i>Contusion</i> .	245. Combustura. <i>A Burn</i> .
239. Profusio. <i>Flux of Blood from Disso- lution of Substance</i> .	246. Excoriatura. <i>Excoriation, or Abra- sion of the Skin</i> .
240. Vulnus. <i>A Wound</i> .	247. Intertrigo. <i>Erosion of the Cuticle</i> .
241. Amputatura. <i>A Wound from the entire Separation of a Part from the</i>	248. Rhagas. <i>Dry Fissure of the Skin</i> .

This order nearly constitutes the seventh of the VITIA class in Sauvages's system, called PLAGÆ; and the seventh of the LOCALES class in Dr. Cullen's, under the name of DIALYSES. Under *Vulnus* are comprehended the three succeeding genera also of LINNÆUS's. The *Fractura* constitutes a separate genus: the *Luxatura* belongs to the ECTOPIÆ order of Dr. Cullen's; the *Profusio*
to

to the APOCENOSES; the *Intertrigo* and *Combustura* to the PHLOGOSIS genus: the remaining genera are not noticed in the *Cullenian* system.

3. EXULCERATIONES. Ulcers; purulent or ichorous Solutions of Continuity.

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|--|--|
| 249. <i>Ulcus. A suppurated Wound of a fleshy Part.</i> | 256. <i>Anthrocace. An Ulcer of the Cavity of the Bone, with Caries.</i> |
| 250. <i>Cacöethes. A spreading, superficial, weeping Ulcer.</i> | 257. <i>Cocyta. Pungent Pain, from an Animalcule lodged in the Part.</i> |
| 251. <i>Noma. A deep, escharotic, cicatrizing Ulcer.</i> | 258. <i>Paronychia. Whitlow.</i> |
| 252. <i>Carcinoma. Cancer.</i> | 259. <i>Pernio. Kibes.</i> |
| 253. <i>Ozæna. An Ulcer of the Antrum Highmori.</i> | 260. <i>Pressura. Phlegmon of the Finger End: from the effect of Cold.</i> |
| 254. <i>Fistula. A sinous, vaginating Ulcer, with Callosity.</i> | 261. <i>Arctura. Inflammation of the Nail, from Curvature thereof.</i> |
| 255. <i>Caries. An Ulcer of the superficies of the Bone.</i> | |

Most of these genera rank with the *PLAGÆ* of Dr. *Sauvages's* class. The *Paronychia* however comes in among the *PHYMATA*; and the *Pressura* and *Arctura* of LINNÆUS are species only of the *Paronychia*, as the *Pernio* is of the *Erythema* in the same system.

The first six genera in this order are classed in Dr. Cullen's system under *Ulcus*; the *Caries* is a distinct genus; the *Arthrocace*, *Paronychia*, and *Pernio*, rank under the *Phlogosis*; and the others are not noticed.

4. SCABIES. Cutaneous Diseases.

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| 262. <i>Lepra</i> . <i>Leprosy</i> . | 272. <i>Anthrax</i> . <i>A Carbuncle</i> . |
| 263. <i>Tinea</i> . <i>Scald Head</i> . | 273. <i>Phlyctæna</i> . <i>A watery Pimple</i> . |
| 264. <i>Achor</i> . <i>Crusta Lactea</i> , of Authors. | 274. <i>Pustula</i> . <i>A Pustule</i> . |
| 265. <i>Pfora</i> . <i>Itch</i> . | 275. <i>Papula</i> . <i>A hard inflamed Pimple</i> . |
| 266. <i>Lippitudo</i> . <i>Blearyedness</i> . | 276. <i>Hordeolum</i> . <i>A Stian</i> . |
| 267. <i>Serpigo</i> . <i>Tetters</i> ; <i>Ring-worm</i> . | 277. <i>Verruca</i> . <i>A Wart</i> . |
| 268. <i>Herpes</i> . <i>Shingles</i> . | 278. <i>Clavus</i> . <i>A Corn</i> . |
| 269. <i>Varus</i> . <i>Pimples</i> . | 279. <i>Myrmecium</i> . <i>A moist, soft Wart</i> . |
| 270. <i>Bacchia</i> . <i>Ruby-face</i> , <i>Gutta Rosea</i> . | 280. <i>Eschara</i> . <i>An Eschar</i> . |
| 271. <i>Bubo</i> . <i>A Bubo</i> . | |

In *Sauvages's* system most of these genera stand in the corresponding class under the orders PHYMATA and EFFLORESCENTIÆ; But the *Lepra*, *Tinea*, and *Pfora*, are referred to the IMPETIGINES, in the class CACHEXIÆ.

The following are distinct genera in Dr. Cullen's system: the *Lepra* under the IMPETIGINES; the *Tinea*, *Pfora*, and *Herpes*, under the DIALYSES. The *Bubo*, *Verruca*, and *Clavus*, form distinct genera, in the same order with the *Phlyctæna* or *Hydatis*, being

being all referred to the TUMORES. Almost all the others rank under the *Phlogosis*, as different species of that genus. *Lippitudo*, *Serpigo*, *Myrmecium*, and *Eschara*, have no place in the Cullenian system.

The characters of the *genera* in this order are well adapted to distinguish the different kinds of *Pustules*; and are of great use as auxiliary terms, in defining other *genera* in different parts of the system.

5. TUMORES. Tumours.

281. Aneurisma. <i>Aneurism.</i>	287. Ganglion. <i>Tumour of a Tendon.</i>
282. Varix. <i>Varix.</i>	288. Natta. <i>Tumour rooted in a Muscle.</i>
283. Schirrus. <i>Schirrus.</i>	289. Spinola. <i>Spina bifida.</i>
284. Struma. <i>Struma.</i>	290. Exostosis. <i>Bony Tumour.</i>
285. Atheroma. <i>Wen.</i>	
286. Anchylosis. <i>A stiff Joint.</i>	

The three first, and the last of these *genera*, stand in the corresponding class of the systems of *Sauvages* and Dr. *Cullen* under the same names. LINNÆUS's *Struma* is their *Scrofula*, and his *Spinola* the *Hydroracbitis*. The *Atheroma* is the *Lupia* of Dr. *Cullen*. The *Ganglion* is a *Condyloma* of *Sauvages*, but stands in the *Cullenian* system under LINNÆUS's term. The *Natta* is neglected by Dr. *Cullen*, but belongs to the *Sarcoma* of our other nosologist.

6. PROCIDENTIÆ. Tumours arising from Dislocation of fleshy or membranous Parts.

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| 291. Hernia. <i>Rupture.</i> | <i>in the Eye.</i> |
| 292. Prolapsus. <i>Pro-</i>
<i>lapsus.</i> | 296. Ectropium. <i>Re-</i>
<i>version of the under</i>
<i>Eye-lid.</i> |
| 293. Condyloma. <i>Con-</i>
<i>dyloma.</i> | 297. Phymosis. <i>Swell-</i>
<i>ing of the Prepuce.</i> |
| 294. Sarcoma. <i>Fungus</i>
<i>Flesh.</i> | 298. Clitorismus. |
| 295. Pterygium. <i>Web</i> | |

The *Hernia*, *Prolapsus*, and *Ectropium*, called *Blepharoptosis* by *Sauvages*, stand among the ECTOPIÆ of his system; the *Phymosis* with the *Phymata*; and the remaining genera among the EXCRESCENTIÆ.

Dr. *Cullen* receives into his ECTOPIÆ only the *Hernia*, and *Prolapsus*. The *Sarcoma* he refers to the TUMORES, and the other genera are not admitted into his system as such.

7. DEFORMATIONES. Distortions of particular Parts, and other Deformities.

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|---|---|
| 299. Contractura. <i>Ri-</i>
<i>gidity of a Joint</i> | <i>tion of the Bones.</i> |
| 300. Gibber. <i>Gibbosity</i>
<i>of the Chest.</i> | 303. Tortura. <i>Wry-</i>
<i>mouth.</i> |
| 301. Lordosis. <i>Incur-</i>
<i>vation of the</i>
<i>Bones.</i> | 304. Strabismus. <i>Squint-</i>
<i>ing.</i> |
| 302. Distortio. <i>Distor-</i> | 305. Lagophthalmia. <i>Re-</i>
<i>traction of the up-</i>
<i>per Eye-lid.</i> |
| | 306. Nycta- |

- | | |
|---|--|
| 306. Nyctalopia. <i>Night-sight.</i>
307. Presbytia. <i>Long-sight.</i>
308. Myopia. <i>Near-sight.</i> Pore-blindness.
309. Labarium. <i>Looseness of the Teeth;</i> as in the Scurvy, &c.
310. Lagostoma. <i>Harelip.</i> | 311. Apella. <i>Abbreviation of the Prepuce.</i>
312. Atreta. <i>Imperforation of a natural Passage.</i>
313. Plica. <i>Plica polonica.</i>
314. Hirsuties. <i>Unnatural Hairyness of the Body.</i>
315. Alopecia. <i>Baldness.</i>
316. Trichiasis. <i>Distortion and Inversion of the Eye-lashes.</i> |
|---|--|

These genera are placed in very different parts of his system by M. Sauvages: the *Contractura*, for instance, and the *Strabismus*, very improperly, as it should seem, among spasmodic diseases; the *Gibber*, or *Gibbositas*, and the *Lordosis*, among the EXCRESCENTIÆ of the VITIA class; the *Nyctalopia*, and the two genera succeeding it, as species of *Amblyopia*, in the class of DEBILITATES, as is the *Lagostoma*, as a species of *Psellismus*; the *Plica* under the name of *Trichoma*, with the CACHEXIÆ; and the *Trichiasis*, as a species of *Ophthalmia*.

Dr. Cullen receives only five of these genera: the *Contractura*, *Strabismus*; the *Presbytia*, and *Myopia*; the two latter as species of his *Dysopia*, all under the LOCALES class: the *Plica* under his genus *Trichoma*, among the IMPETIGINES in the CACHEXIÆ class.

8. MACULÆ. Blemishes on the Skin.

- | | |
|-------------------------------|--------------------------------|
| 317. Cicatrix. <i>A Scar.</i> | 322. Melasma. <i>Black</i> |
| 318. Nævus. <i>A Mole.</i> | <i>Blotches;</i> on the |
| 319. Morphæa. <i>Scurf.</i> | <i>Legs, or other</i> |
| 320. Vibex. <i>Purple</i> | <i>Parts unexposed</i> |
| <i>Spots and Wheals;</i> | <i>to the Air.</i> |
| <i>under the Skin.</i> | 323. Hepatizon. <i>Brown</i> |
| 321. Sudamen. <i>Transi-</i> | <i>itching Morphew.</i> |
| <i>tory, red, stinging</i> | 324. Lentigo. <i>Freckles.</i> |
| <i>Spots on the Skin.</i> | 325. Ephelis. <i>Sun-burn.</i> |

These lighter affections stand in *Sauvages's* system either among the MACULÆ or EFFLORESCENTIÆ, but he does not allow them all the rank of genera. The *Cicatrix* is a species of his *Leucoma*, as the *Morphæa* and *Melasma* are of his *Vitiligo*; and the *Vibex*, and *Sudamen*, of the *Ecchymoma*. The *Nævus* stands under the same generic name in both; but the *Lentigo* of LINNÆUS is a species of *Sauvages's* *Ephelis*.

Dr. Cullen has not given a place to these genera in his system.

Our author has subjoined to this distribution of diseases, a brief view of his *Theory of Physic*, delivered in that terse, concise, and methodic manner, so peculiar to himself; and which, as it appears to have been intended entirely for the use of his pupils, nothing less than the author's own comment can do sufficient justice to. We should not therefore have taken notice of it, in our plan, had it not been necessary in order to explain several papers

papers hereafter to be mentioned in the *Amanitates Academicæ*. Briefly, therefore, the *Linnean* principles of physic suppose the human body to consist of a *cerebrose medullary* part, of which the nerves are so many processes, and which we call the *nervous system*; and, a *cortical* or vital part, including the *vascular* system and contained fluids: the former, being the animated part, or that in which the *sentient*, moving principle peculiarly resides, is considered as deriving its *nourishment* from the subtlest fluids of the vascular system, and its *energy* from an electrical principle inhaled by the lungs. Farther, this theory supposes the circulating fluids to be capable of being vitiated, by principles which the author chuses to consider either as *acescent*, or *putrid* ferments; the former acting on the *serum*, and being the exciting cause of *critical* fevers; the latter, on the blood properly, or *crassamentum*, and exciting *phlogistic* diseases. The *exanthematic* class is supposed to be excited by some external causes, which we call *Contagion*, and which *hypothetically* he proposes as being *animalcula*. From the incessant attrition of the *cortical* or vascular system, it requires perpetual reparation; this is to be effected by an *appropriate* diet. From an *improprie* diet, or regimen, spring the diseases of this part of the system, originally and more particularly; these are to be remedied by *sapid* medicines, as those of the *medullary* system are by *olids*. Hence arises the author's general division of all medicines, as discoverable by their sensible qualities, to the *taste*, and *smelling*.

The *Sapids*, according to this theory, acting peculiarly on the cortical part, as the *Olids* do immediately on the *medullary*, or nervous system. In order however to obtain a more complete idea of the effects of each of these general classes of medicines, each must be viewed in its most simple state, by which *Sapids* will appear to be rather what we call *Nutritives*; and *Olids*, more strictly speaking, *Medicines*. A table of the several *qualities* of medicines, according to these two general divisions, closes the *Genera Morborum*.

In 1766, LINNÆUS published a small piece, under the title of *CLAVIS MEDICINÆ duplex, exterior et interior*. Holm. 8vo. pp. 29. This small tract may be considered as a syllabus of his lectures. It is an enlarged view of the theory just mentioned, connecting it with general *Pathology*, and the therapeutic part of *physic*. In the latter part all simples are arranged in thirty *orders*, according to their sensible qualities, agreeably to the theory; which is displayed more at large in two papers printed in the *Amanitates Academicæ*, under the titles of *Sapores, et Odores Medicamentorum*.

It appears from several parts of the writings of LINNÆUS, that the *dietetic* part of *physic* had been an object to which he had paid much attention; and he has explained himself in the following manner relating to it:—*In his meæ deliciæ, in his plura collegi, quam quod novi alius ullus*:—but, whether our author's observations on this subject may hereafter be published, we are yet to learn.

In

In 1771 was published LINNÆUS's last work, being the continuation of the *Mantissa*, in which the work is carried on to 588 pages, under the title of MANTISSA ALTERA. Near one half of this volume comprehends additional new *genera* and *species*, and the remaining part a variety of emendations, with some considerable augmentation to the animal kingdom. These will greatly enrich a future edition of his works; and in the preface he has earnestly intreated succeeding editors to pay a proper regard to them.

Besides his separate works, which we have now brought to a conclusion, LINNÆUS wrote a great number of papers on the subjects of physic and natural history, which were published in the *Acta Literaria Upsalienfis*, and in the *Stockholm Acts*. The first of these works was begun by *Olaus Celsus* in 1720, and continued to the year 1750, and is in Latin, in 5 volumes, quarto. The latter publication is in the *Swedish* language, in the octavo form, and has been continued ever since the establishment of the academy at *Stockholm*, in 1739, by king *Adolphus*. Many of these papers are superseded by the subsequent works of our author, neither would it be within our plan to give a particular detail of them: we are therefore only to subjoin a catalogue of these detached pieces, and regret that it is not in our power to make it more complete; or to add such, if there be any, as may have been given by LINNÆUS to foreign academies.

In

In the *Acta Upsalienſia* are the following papers, written by LINNÆUS.

Florula Lapponica, in 1732. This, as is before observed, was our author's first publication, and conſiſts only of a bare catalogue of the *Lapland* plants, digeſted into the order of the *ſexual ſystem*, of which it is the firſt ſpecimen. The ſecond part of this liſt appears not till the year 1734.

Animalia Regni Sueciæ, in 1736.

Orchides iſſque affines, in 1740. This catalogue is accompanied by a copious collection of ſynonyms to each ſpecies.

Genera Plantarum Nova, in 1741.

Euporiſta in Febris intermiſſentibus. This paper, as likewiſe ſeveral others, if we miſtake not, was publiſhed, agreeably to a laudable cuſtom of that country, in the yearly *Kalendars*, by which means uſeful intelligence finds its way into the moſt remote and obſcure receſſes of every kingdom, in 1742.

Euporiſta in Dyſenteria, in 1745.

Pini uſus æconomicus, in 1743.

Abietis uſus æconomicus, in 1744.

The manifold uſes of theſe trees, ſome of which were not ſufficiently known in divers parts of the kingdom of *Sweden*, induced our author to throw together all that his extenſive journeys had enabled him to collect thereon, in theſe two papers.

Sexus Plantarum, in 1744.

Sexus Plantarum uſus æconomicus, in 1745. The practical uſe of this paper is more particularly an object of all who have the care of gardens, to whom

whom the sex of plants is no longer a matter of mere speculation.

Theæ Potus, in 1746.

Scabiosæ novæ Speciei Descriptio, in 1744, afterwards called by our author, in his *Species Plantarum*, *Scabiosa Tatarica*.

Penthorum, a new genus of plants, from *Virginia*, described and figured, in 1744.

Cyprini pinnae ani radiis xi. pinnis albenibus, descriptio. (Cyprinus Grissagine, Syft. p. 529.) A fish of the lakes of *West Bothnia*.

After the institution of the Royal Academy of Sciences at *Stockholm*, of which LINNÆUS was the first president, his communications were chiefly made in the *Acts* of that body. In these the following papers occur.

Cultura Plantarum Naturalis. Vol. I. for the years 1739 and 1740. This is an attempt to reduce the art of gardening to scientific principles.

Gluten Lapponum e Perca. ib. p. 221.

Oestrus Rangiferinus, in 1740, p. 121. A description, accompanied with figures, of the Gad-fly, (*Oestrus Tarandi*, Syft. Nat. p. 969.) which is bred under the skin on the backs of the reindeer, and from which a third of the fawns not unfrequently perish.

The *Glue* of the *Perch* is made from the skins, which are scraped off, put into a bladder, and boiled to a proper consistence.

Picus pedibus trydaetylis. ib. p. 222. A description of the three-toed Wood-pecker, before that time unnoticed, since figured by *Edwards*, tab.

114, and named by our author, in his *System*, *Picus tridactylus*, p. 177. It is found also in *Hudson's Bay*, and described by Mr. *Forster*, *Phil. Transf.* Vol. lxii. p. 388.

Mures Alpini Lemures. ib. p. 326. The *Mus Lemmus* of the *System*, p. 80, or *Leming*, the well-known pest of the North.

Passer Nivalis. ib. p. 368. (*Emberiza Nivalis*, *Syft.* p. 308.) Greater Brambling, or Snow Bunting; since more fully known and described.

Piscis Aureus Chinensium. ib. 403. The Gold-fish, or *Cyprinus Auratus*, *Syft.* 527.

Fundamenta Œconomiae. ib. p. 411.

Formicarum Sexus. Vol. II. 1741, p. 37. This paper contains the description and history of five species of *Ants* found in *Sweden*, and throws much light on the œconomy of those insects.

Officinales Suecicæ Plantæ. ib. p. 81. In this paper our author informs his countrymen of several articles of the *Materia Medica* growing indigenously in *Sweden*, and which they had unnecessarily imported.

Centuria Plantarum in Suecia rariorum. ib. p. 179. These were all rare plants not observed in *Sweden* before.

Plantæ Tinctoriæ indigenæ. Vol. III. 1742, p. 20. The discovery of plants adapted to the art of dyeing was one of LINNÆUS's objects professedly, in his *Iter Gotthlandicum*, of which we have spoken before.

Amaryllis Formosissima. ib. p. 93. The *Jacobæa Lilly* described and figured.

Gramen

Gramen Sæltung. ib. p. 146. A description of, and persuasive to, the culture of the *Triglochin Maritimum*, Spec. Plant. p. 483, or *Sea Spiked Grass*, which is the delight of horned cattle.

Fœnum Suecicum. ib. p. 191. A recommendation also of the culture of the *Medicago falcata*, Sp. Pl. p. 1096; or *Yellow-Medic*, as a substitute for *Lucern* in *Sweden*.

Phaseoli Chinenfis species. ib. p. 206.

Epilepsiæ Vernensis causa. ib. p. 279.

Jackas Hapuch. Vol. IV. 1743, p. 291. (*Arbutus Uva Ursi*, Sp. Pl. p. 566.) Bear-berries. A plant of use in *Sweden*, both in dyeing and tanning, and frequently smoked with tobacco; better known since in other parts of *Europe*, by the reputation it acquired, for some time, in calculous cases.

Fagopyrum Sibiricum. Vol. V. 1744, p. 117. *Polygonum tataricum*, Sp. Pl. 521. A kind of *Buck-wheat*, which is cultivated, and supplies the want of other grain for bread, in divers parts of *Tartary* and *Siberia*.

Petiveria. ib. p. 287. *Petiveria alliacea*, Sp. Pl. p. 486, described and figured. An acrid, and even caustic plant, of which the *Guinea-hens*, in the *West Indies*, are said to be extremely fond; thence called *Guinea-benweed*.

Passer procellarius. Vol. VI. 1745, p. 93. A description of the *Procellaria pelagica*, Syst. p. 212. The *Little Peterel* of *Edwards*, t. 90. or *Storm-finch*.

Limnia.

Linnaea. Vol. VII. 1746. p. 130. *Claytonia Sibirica*, Sp. Pl. 294. A curious plant, discovered by *Steller* in the most eastern parts of *Siberia*, and in the islands which lie scattered between that part of *Asia* and *North America*.

Coleber (*Chersea*) *scutis abdominalibus 150 squamis subcaudalibus 34*. Vol. X. 1749. p. 246, t. 6. A most venomous small *Snake*, found in *offeries* and *willow-holts*, the bite of which is frequently fatal, and much dreaded, particularly in *Smoland*. It is a small animal, not more than six inches long, and is called by the *Smolanders*, *Asping*.

Avis Sommar Guling appellata. Vol. XI. 1750, p. 127. The *Oriolus Galbula*, *Syft.* p. 160, or *Golden Thrush*; described and figured: singular in being a native both of northern *Europe* and of *Bengal*.

Insectum quod frumenti grana interius exedit; described afterwards in the *System*, under the name of *Musca Frit*, N° 994. *ib.* p. 179. Our author thinks that every tenth grain of barley is destroyed in *Sweden* by this insect; and that the damage occasioned thereby, cannot amount to less than an hundred thousand ducats annually.

Emberiza Ciris, *Syft.* p. 313, or *Painted Finch of Catesby*. I. t. 44; described and figured. *ib.* p. 278.

De Characteribus anguium. Vol. XIII. 1752, p. 206. It has been observed before, that *LINNÆUS* first attempted to fix the characters of the *Serpentes* from the number of the *shields* and *scales* of the *abdomen* and *tail*. He here observes, that this cha-

racter is not sufficiently permanent; but that what is wanting to complete the number in one, will usually be found in the other.

Novæ duæ Tabaci species. Vol. XIV. 1753, p. 37; described and figured. They stand in the *Species Plant.* p. 259, under the names of *Nicotiana*, *paniculata* and *glutinosa*.

De Plantis, quæ Alpium Suecicarum indiginæ fieri possint. Vol. XV. 1754, p. 182. An enumeration of such plants, as the author thought might usefully be cultivated on the *Lapland* and *Swedish* Alps.

Simia, ex Cercopithecorum genere, descriptio. ib. p. 210; called in the System, *Simia Diana*, p. 38.

Mirabilis longifloræ (Syft. p. 252.) *descriptio.* A Mexican plant, now well known in our *English* gardens. Vol. XVI. p. 176.

Lepidii (Cardamines, Syft. 899.) *descriptio.* A new plant, sent to our author from *Spain*, where it was found by M. *Loefling*. ib. p. 273.

Ayenæ (Pusillæ, Spec. 1354.) *descriptio.* Vol. XVII. 1756, p. 23. An elegant plant, sent by Mr. *Miller* to our author. It is figured by *Miller*, tab. 118; and by *Sloane*, tab. 132.

Gauræ (biennis, Spec. Pl. 493.) *descriptio.* A new plant, from seeds sent by Mr. *Collinson*. ib. p. 222.

Loeflingia et Minuartia. Vol. XIX. p. 15. Two new genera of plants, sent by M. *Loefling* from *Spain*.

Entomolitus paradoxus (Syft. Natur. III. p. 160.) *descriptus.* Vol. XX. 1759. p. 19. accompanied with

with figures. A curious fossil, from Count Tef-
fin's museum.

Gemma, Penna pavonis, dictum. ib. p. 23. Our
author thinks this fossil is formed from the carti-
lage or hinge of the *Pearl Muscle*. He has called
it in the System, *Helmintholithus* (Androdamas)
Mytili margaritiferi cardinis, viridis, p. 165.

Coccus Uvæ Ursti, (Syst. p. 742.) ib. p. 28. This
cochineal-insect is very like the *Polish* kind, found
at the roots of the *Knawel*, but is double the size,
and yields a very fine red colour.

De Rubo arctico plantando. Vol. XXIII. 1762.
p. 192. The *Rubus arcticus*, Sp. Pl. p. 708, much
valued for the sake of the berries; is difficultly
cultivated in the southern parts of Sweden. This
paper contains the result of some trials made to
inure it to a more southern clime: they are too
operose to prove of general use.

Observationes ad Cerevisiam pertinentes. Vol.
XXIV. 1763. p. 50.

Animalis Brasiliensis, (Muris Aguti, Syst. p. 80.)
descriptio. Vol. XXIX. 1768. p. 26. Long-
noled Cavy of Pennant.

Viverræ naricæ, (Syst. p. 64.) *descriptio*. ib. p.
140. An American animal, nearly allied to the
Coati-mondi of Brasil.

Simia Oedipus. (Syst. p. 41.) The Little Lion-
monkey, described. ib. p. 146.

Gordius Medinensis, (Syst. p. 1075;) or Guinea-
worm. One of these animals, half an ell long,
was discovered in a living state at Gottenburg, and
communicated

communicated by the King of Sweden to our author. ib.

Calceolaria pinnata (Syst. Nat. ed. 13. p. 60.)
descriptio. Vol. XXXI. 1770. p. 286. A Peruvian plant, of the *Diandrous* class, with a labiated flower.

It has been before mentioned, that our author has interspersed, in the *Flora Lapponica*, a great variety of curious particulars, relating to the country, and its inhabitants, their manners, their economy, diseases, &c.: and in the preface he tells us, that he had it in meditation to give the remaining part of the natural history. This was to have appeared under the title of *Lachesis Lapponica*; but it is with great regret that we must now give up the expectation of this work. Mr. Pennant has informed us, that he once reminded him of it, and received for answer,—*nunc nimis sera nciperem*:

*Me quoque debilitat series immensa laborum,
 Ante meum tempus cogor et esse senex.*

*Firma sit illa licet, solvetur in æquore navis,
 Quæ nunquam liquidis sicca carebit aquis.*

We know not of any other publication of LINNÆUS's after the *Mantissa altera*, in 1771; and indeed, the preface to that work is sufficient to preclude the expectation of any new performance, if his advanced age had not, of itself, rendered it sufficiently improbable after that period.

In the spring of the year 1772, Dr. *Murray*, Professor of Physic and Botany at *Göttingen*, a Swede by birth, who had been educated under LINNÆUS, and had long enjoyed a great share of his confidence and esteem, paid his Preceptor a visit: he found his faculties unimpaired, and his ardor for the improvement of science as strong and vigorous as ever. He speaks with great delight of the satisfaction he received from his company, and in the contemplation and inspection of his museum at *Hammarby*; but regretted much to find, that LINNÆUS had no farther thoughts of publishing a new edition of his *System of Nature*; purposing only to give a supplement. However, before Dr. *Murray* left *Upsal*, he prevailed on him to promise that he would transmit to him his additional observations to the *Systema Vegetabilium*, in order to enable him to give a complete edition of that work. This the Professor did; and Dr. *Murray* performed it in the year 1774, very much to the satisfaction of all who pursue the LINNÆAN method. The manuscript additions communicated on this occasion by our author, together with those collected from the several *Addenda*, and from the *Mantissa*, enabled Dr. *Murray* to extend this volume to above one hundred pages beyond that of the 12th edition published in 1767.

It appears that LINNÆUS, upon the whole, enjoyed a good constitution. At times, however, he had been severely afflicted with an *hemisphæria*; and had not been exempted from the gout. How much he suffered from this latter distemper, we have

have before mentioned, when treating on the *Philosophia Botanica*. And notwithstanding the sound state in which Dr. Murray left him, we find, that very soon after, his memory became somewhat impaired. The consciousness of this defect was said to have induced him to decline all thoughts of further publications, and to transmit to Dr. Murray such materials as were in readiness to compleat future editions of his *System*.

In the summer of 1776, it was known here that his strength was declining apace, and his infirmities in general much increased, he being unable to take his usual walks in his garden without assistance. At the latter end of the year he was seized with an *apoplexy*, which left him paralytic; and at the beginning of the year 1777 he suffered another stroke, which very much impaired his mental powers. These attacks, at his advanced stage of life, shewed that dissolution was not far off. But the disease, which was said to have been the more immediate cause of his death, was an ulceration of the urinary bladder. Nevertheless, he languished through the year, and died on the 11th of *January*, 1778, aged 70 years and 8 months.

To the lovers of science it will not appear strange, nor will it be unpleasant, to hear, that uncommon respect was shewn to the memory of this great man. We are told, that, "on his death, a general mourning took place at *Upsal*, " and that his funeral procession was attended by " the whole university, as well professors as students, and the pall supported by sixteen doctors

“ of phyfic, all of whom had been his pupils.” The King of *Sweden*, after the death of LINNÆUS, ordered a medal to be struck, of which “ one fide exhibits LINNÆUS’s buft and name, and the other *Cybele*, in a dejected attitude, holding in her left hand a key, and furrounded with animals and growing plants, with this legend—“ *Deam luctus angit amiffi*;—and beneath,—*post obitum Upsaliæ, die x. Jan. M.DCC.LXXVIII. Rege jubente.*”—The fame generous monarch not only honoured the Royal Academy of Sciences with his prefence when LINNÆUS’s commemoration was held at *Stockholm*, but, as a ftill higher tribute, in his fpeech from the throne to the affembly of the ftates, lamented *Sweden*’s lofs by his death. Nor was he honoured only in his own country. The prefent learned and worthy profefſor of botany at *Edinburgh*, not only pronounced an eulogium in honour of LINNÆUS, before his ftudents, at the opening of his lectures in the ſpring of 1778, but laid alfo the foundation-ftone of a monument to be raifed to his memory; which, while it perpetuates the name and merits of LINNÆUS, will do honour to the founder, and, it may be hoped, prove the means of raifing an emulation favourable to that ſcience which this illuſtrious *Swede* fo highly dignified and improved. This monument conſiſts of a vaſe, ſupported on a pedeflal, with this infcription,

LINNÆO POSUIT J. HOPE.

The

The high reputation which this great man has long held among the naturalists throughout the world, might readily perhaps preclude any encomium from our pen; since, to all lovers of *natural science*, his *name* itself is eulogy, and will doubtless very long be inseparable from the idea of his extraordinary merit. Might we, nevertheless, be indulged so far, we hope the following brief estimate of his talents will be thought just, and easily deduced from an impartial view of his writings.

Nature had, in an eminent manner, been liberal in the endowments of his mind. He seems to have been possessed of a lively imagination, corrected however by a strong judgment, and guided by the laws of system. Add to these, the most retentive memory, an unremitting industry, and the greatest perseverance in all his pursuits; as is evident from that continued vigour with which he prosecuted the design, that he appears to have formed so early in life, of totally reforming, and fabricating anew the whole science of natural history: and this fabric he raised, and gave to it a degree of perfection unknown before; and had moreover the uncommon felicity of living to see his own structure rise above all others, notwithstanding every discouragement its author at first laboured under, and the opposition it afterwards met with. Neither has any writer more cautiously avoided that common error of building his own fame on the ruin of another man's. He every where acknowledged the several merits of each author's system; and no man appears to have been more sensible of the *par-*

tial defects of his own. Those anomalies which had principally been the objects of criticism, he well knew every *artificial* arrangement must abound with; and having laid it down as a firm maxim, that every system must finally rest on its intrinsic merit, he willingly commits his own to the judgment of posterity. Perhaps there is no circumstance of LINNÆUS's life, which shews him in a more dignified light, than his conduct towards his opponents. Disavowing controversy, and justly considering it as an unimportant and fruitless sacrifice of time, he never replied to any, numerous as they were at one season.

To all who see the aid this extraordinary man has brought to *natural science*, his talents must appear in a very illustrious point of view; but more especially to those who, from similarity of taste, are qualified to see more distinctly the vast extent of his original design, the greatness of his labour, and the elaborate execution he has given to the whole. He had a happy command of the Latin tongue, which is alone the language of science; and no man ever applied it more successfully to his purposes, or gave to description such copiousness, united with that precision and conciseness, which so eminently characterize his writings.

In the mean time, we are not to learn, that it has been objected as derogatory to his learning in no small degree, that he has introduced a number of terms not authorized by classical authority. But, granting this, it ought to be recollected, that LINNÆUS, in the investigation of nature, has
discovered

discovered a multitude of relations which were entirely unknown to the antients; if therefore there be any force in the objection, it should first be shewn, that the terms which he has introduced to express these relations, are not fairly and analogically deduced from the language; since it must surely be granted, that LINNÆUS could not have spoken the language of *natural history*, as it is known at this day, in that of *Pliny*, or of any classical writer whatever.

The ardor of LINNÆUS's inclinations to the study of nature, from his earliest years, and that uncommon application which he bestowed upon it, gave him a most comprehensive view, both of its pleasures and usefulness, at the same time that it opened to him a wide field, hitherto but little cultivated, especially in his own country. Hence he was early led to regret, that the study of natural history, as a public institution, had not made its way into the universities; in many of which, logical disputations, and metaphysical theories, had too long prevailed, to the exclusion of more useful science. Availing himself therefore of the advantages which he derived from a large share of eloquence, and an animated style, he never failed to display, in a lively and convincing manner, the relation this study hath to the public good; to incite the great to countenance and protect it; to encourage and allure youth into its pursuits, by opening its manifold sources of pleasure to their view, and shewing them how greatly this agreeable employment would add, in a variety of instances,

both to their comfort and emolument. His extensive view of natural history, as connected with almost all the arts of life, did not allow him to confine these motives and incitements to those only who were designed for the practice of physic. He also laboured to inspire the great and opulent with a taste for this study; and wished particularly that such as were devoted to an ecclesiastic life should share a portion of natural science, not only as a means of sweetening their rural situation, confined, as many are, perpetually to a country residence, but as what would almost inevitably lead, in a variety of instances, to discoveries which only such situations could give rise to, and which the learned in great cities could have no opportunities to make. Not to add, that the mutual communication and enlargement of this kind of knowledge among people of equal rank in a country situation, must prove one of the strongest bonds of union and friendship, and contribute, in a much higher degree than the usual perishing amusements of the age, to the pleasures and advantages of society.

LINNÆUS lived to enjoy the fruit of his own labour in an uncommon degree. Natural history raised itself in *Sweden*, under his culture, to a state of perfection unknown elsewhere, and was from thence disseminated through all *Europe*. His pupils dispersed themselves all over the globe, and with their master's fame, extended both science and their own. More than this, he lived to see the sovereigns of *Europe* establish

establish several public institutions in favour of this study, and even professorships established in divers universities for the same purpose, which do honour to their founders and patrons, and which have excited a curiosity for the science, and a sense of its worth, that cannot fail to further its progress, and in time raise it to that rank, which it is entitled to hold among the pursuits of mankind.

Were it in our power minutely to describe the person of our author, in conformity to the custom of biographers, it would be a matter of small moment, as the endowments of his mind, and his great talents, have so superior a claim to attention. In the commemoration-speech, delivered by his friend Dr. *Bæck*, physician to the king of *Sweden*, LINNÆUS's stature is described as being "diminutive; his head large; his look ardent, piercing, and apt to daunt the beholder. His ear not sensible to music; his temper quick; his memory good, though in the latter period of his life liable to fail him sometimes; his knowledge of languages confined, yet no interesting discovery escaped him. In summer he used to sleep from ten to three o'clock, in winter from nine to six, and instantly to cease from his labours when he found himself not well disposed for them. He was an agreeable companion, of quick sensibility; but easily appeased." Those who would be gratified by forming an idea of his person, may be acquainted, that there are extant three half-length

length prints of LINNÆUS in his works. Two of these are in octavo, and the other in a half-sheet, or rather large quarto. The first was prefixed to the *Leipsic* edition of the *Systema Naturæ*, printed in 1748, and represents LINNÆUS, as we apprehend, in about the fortieth year of his age; another, to the second edition of the *Species Plantarum*, in 1762; and the larger one to the sixth edition of the *Genera Plantarum*, in 1764. In the first and the last of these, which are by much the better engravings, he is figured in an undress, resting upon a volume of the *Systema*, and holding in his hand a sprig of the LINNÆA, a plant so called by Dr. Gronovius, in honour of his name. In that of 1762, he is represented in a full dress, with the *insignia* of the Order of the Polar Star at his breast, and *Aurivillius's* inscription underneath:

“ *Hic ille est, cui regna volens natura reclusit,*

“ *Quamque ulli dederat plura videnda dedit.*”

The Academy of Sciences at *Stockholm* have, at their own expence, directed that an engraving of his portrait should be made at *Paris*, from an original picture by the famous *Swedish* painter *Roslin*. There is a striking likeness also exhibited on a large medallion, *a l'antique*, of almost two feet in diameter, by M. *L'Archeveque*. In *England* we have an elegant small medallion, fabricated by those excellent artists Mess. *Wedgwood* and *Bentley*. It represents LINNÆUS in profile, when far advanced in years. The bust is white, upon a light-blue ground,

ground, and the *Linnea* placed at the breast. This is said, by all who knew the professor, to bear the greatest likeness. We regret that it is not in our power to describe the medals which were struck in honour of LINNÆUS by order of several noblemen of the first distinction in *Sweden*, particularly that by Count *Tessin's* direction, since that nobleman was among the first who discerned and patronized the merit of our author, and ever bore to it the most public and honourable testimony. This LINNÆUS hath acknowledged in the warmest effusions of gratitude.

It hath been observed before, that the professor married the daughter of Dr. *More*, the provincial physician of *Dalekarlia*, soon after he settled at *Stockholm*, in 1739. This lady survived him; and he has left a son, named *Charles*, and four daughters. The younger *Linnaeus* was demonstrator in the botanical garden at *Upsal*, so early as the year 1762; having in that, and the succeeding year, published two *Decads of rare Plants*, lately raised there, accompanied with the figures. Not long after he was constituted joint professor in the botanical chair with his father; and of late years entirely occupied that department. Since the death of his father, we learn that he has obtained some of his employments, particularly the professorship of the theory of physic; and has resigned that of botany in favour of Dr. *Thunberg*. It has been said, that he intends to publish a MANTISSA TERTIA, which his father left nearly finished; also several collections of plants which had been sent to LINNÆUS,

NÆUS, not long before his death, from the *Cape of Good Hope*, and from several other parts of the world.

Elizabeth Christina, one of the daughters of our author, made herself known to the learned world, in 1762, by a discovery which was published in the *Swedish AEs* of the same year. It related to a curious, and before quite unobserved appearance, in the flowers of the *Indian Cresses*, (*Tropæolum majus*) which she had perceived to emit spontaneously, at certain intervals, sparks like those of electricity, or rather such as arise from a fulminating powder. This was only visible in the dusk of the evenings, and ceased when total darkness came on. She had shewn this singular appearance to her father, and other philosophers, particularly to Mr. *Wilcke*, a celebrated electrician, who was inclined to believe that it was an electrical phenomenon.

A

BRIEF ACCOUNT

OF THE

AMCENITATES ACADEMICÆ.

THE collection known under this title consists of seven volumes in 8vo, and contains 150 theses. It is supposed the first volume was not originally collected by LINNÆUS himself; but he at least reprinted it very early, and, that he might not be defrauded of the advantage of these publications, became the editor of all the succeeding volumes. Something has been said relating to this collection in the course of these memoirs; to which we have only to add, that we beg the reader to regard the following pages, as little more than an enlarged table of contents, intended only to excite a due attention to this part of LINNÆUS's works, which the compiler presumes to be less known than it deserves; and at the same time to entreat him to consider, that it is impossible, by means of any abridgment, to give an adequate idea of that merit, and excellent arrangement of the subjects in these volumes, which cannot but render them an agreeable and useful miscellany, and ornament to the library of every naturalist, philosopher, and physician.

AMCENI-

AMCENITATES ACADEMICÆ. Vol. I.

Holm. 1749. pp. 610.

I. BETULA NANA. L. M. Klase. 1743.

In this dissertation is exhibited a complete history, accompanied with a figure, of the *Betula* (nana) *foliis orbiculatis crenatis*. Spec. Plant. pp. 1394, or the *Dwarf Birch*, which cloaths the *Lapland* alps in great quantities, and is of signal use in the œconomy of the inhabitants of that arctic region. The branches furnish them with their chief fuel, and the seeds are the food of the ptarmigans, or white partridge, (*Tetrao Lagopus*, Syst. 274.) These birds, being much esteemed, make a considerable part of the sustenance of the inhabitants: great quantities are caught in the winter season, and sent to different provinces. Before LINNÆUS made his *Lapland* expedition, this *Birch* had been considered as a variety only of the common tree of that name; but its distinct specific characters have since been established. This tree has within these few years been added to the *Flora Britannica*, having been found in the highlands of *Scotland*.

2. HISTORIA naturalis et medica FICUS. C. He-
gardt. 1744.

From the earliest times, the cultivation of the fig-tree has been an important object in all the oriental countries. In this dissertation we are presented with a history of this genus, of which

the writer has enumerated 22 species: LINNÆUS has however greatly reduced this number, in his *Species Plantarum*, since many are varieties effected by culture. That part of the history of this tree, which for many ages was so enigmatical, and which nothing but the doctrine of the sexes of plants has completely cleared up, namely the husbandry or *caprifigation*, as it is called, is more particularly worthy of attention, not only as a singular phenomenon in itself, but as it has furnished one of the most convincing proofs of the reality of the sexes of plants. Our limits will not allow us to detail this subject; in brief it is this:—It is now known, that the flowers of the fig-tree are situated within a pulpy receptacle, which we call the *Fig*, or fruit of this tree; of these receptacles, in the wild fig-tree, some have male flowers only, and others have male and female, both distinct, though placed in the same receptacle. In the garden, or *cultivated* fig, these are found to contain only female flowers; which are fecundated by means of a kind of gnat, (*Cynips Pfenex*, Syst. Nat. 919.) bred in the fruit of the *wild* fig-trees, which pierces that of the *cultivated*, in order to deposit its eggs within; at the same time diffusing within the receptacle the *farina* of the male flowers. Without this operation the fruit may ripen, but no *effective* seeds are produced: hence the *garden* fig can only be propagated by layers and cuttings, in these countries, where the *wild* fig is not known. The process of thus ripening the fruit, in the oriental countries, is not left to nature, but is managed with

with great art, and different degrees of dexterity; so as to reward the skilful husbandman with a much larger increase of fruit than would otherwise be produced. A tree of the same size, which, in *Provence*, where caprification is not practised, may produce about 25 pounds of fruit, will, by that art, in the *Grecian* islands, bring ten times that quantity.

3. DISSERTATIO de PELORIA. D. Rudberg. 1744.

A description, with the figure, of a very extraordinary variety of the common yellow *Toad Flax*, (*Antirrhinum Linaria*, Sp. Pl. 858.) which was found in several parts of *Sweden*, and since in *Germany*, and engaged the attention of the botanists very greatly at the time. Indeed its variation is uncommonly singular. The flower, instead of the ringent, tetrandrous flower of the *Linaria*, with a single, corniculated *Nectarium*, was found with a regular, monopetalous, pentandrous tube, from the base of which proceeded five *Nectaria*; yet, uncommon as this proved, LINNÆUS discovered it to be no other than a monster, or *hybrid* plant, sprung from the *Linaria*, though it does not appear to this day that its origin on the other side has been sufficiently ascertained. The habit of the plant, and its sensible quality, agree with those of the *Linaria*.

4. De CORALLIIS BALTICIS. H. Foug. 1745.

In this tract the author, after having traced the history of *Corals* from the remotest period of natural history,

history, and considered the several theories that have at different times prevailed relating to the production of these bodies, acquiesces in the *modern one*, which ascribes their formation to *Polypes*, and which the late Mr. *Ellis*, and several other writers, have much confirmed and illustrated. He then gives a copious description of twenty species, all found in the *Baltic*; of which an excellent engraving is subjoined. These bodies are found in immense masses in some parts of this sea: on the coast of *Gothland* there are strata of corals extending through tracts of several miles.

5. AMPHIBIA GYLLENBORGIANA. *B. R. Haft.* 1745.

A detailed description of 24 species of animals, all of the *Amphibia* class, which were presented by Count *Gyllenborg* to the university of *Upsal*, of which he was at that time chancellor; and to which he had been a munificent patron, having interested himself, in procuring to be built and furnished, an astronomical observatory; in restoring to a state of usefulness the botanic garden, which had been in ruins for many years; in causing stoves to be erected, and a house built for the demonstrator: and finally, in having presented to the university his own *museum*, collected at a great expence, and consisting of rare *amphibia*, insects, corals, minerals, and moreover of many elegant works of art.

In this tract is exhibited the first specimen of LINNÆUS's method of zoological description at

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large;

large; as also the first attempt to form the specific character of the *Serpentes* ORDER, from the "different number of the rings and scales of the body and tail, taken conjointly." Former authors generally had recourse to colour alone in distinguishing these animals, which was found at length to be too unstable, and had given rise to a most enormous multiplication of the species. This mode of distinction has been since adopted by others, and is retained in the *Systema Naturæ*.

6. PLANTÆ MARTINO-BURSERIANÆ. *R. Martin.*

1745.

J. Burser, a most diligent disciple and friend of *Caspar Baubine*, and afterwards professor of physic at *Sora*, in the kingdom of *Naples*, who had travelled almost all over *Europe*, and had particularly sought for rare plants in the Alps, had collected in these journeys an *Hortus Siccus*, contained in 25 volumes, which, after various fates, was given by *M. Coijet* to the university of *Upsal*. The purport of this tract is to illustrate the most rare plants contained in this collection, and such particularly as were obscurely known to the collector, and to add to these the specific names, according to the principles of the *Linnean* method: with this view 240 species are here enumerated.

7. HORTUS UPSALIENSIS. *S. Naucner.* 1745.

Botanical gardens began to be founded in *Europe*, so early as the middle of the sixteenth century: the

the first was that of *Padua*, in 1540. The garden of *Upsal* was founded in 1657, by *Charles Gustavus*, under the direction of the elder *Rudbeck*. How much this garden owes to *LINNÆUS*, we have already said, in the account of the catalogue of plants published by himself in 1748. This history of the antient and modern state of the garden given by *Naucler*, contains a variety of curious matter on the subject, and is illustrated with a ground-plot and view of the garden; lists of the succulent plants and others; and, what is more particularly acceptable, the lives of the *Rudbecks*, father and son, whose literary fame is founded, not on botany alone, but on anatomy, and the knowledge of antiquities.

8. De PASSIFLORA. *J. G. Hallman.* 1745.

A very methodical history of that beautiful and much-admired genus of plants, which the Catholics, who first saw it in *America*, and from the fancied resemblance of the cross which they perceived in the flower, called *Passion Flower*; and which soon held a distinguished rank in the *European* gardens. *M. Hallman*, after a chronological list of those writers, who first exhibited the several species, from *Peter Ciltza* and *Monardes*, down to *Dillenius*, describes at large 22 species, and gives their several synonyms, adding afterwards a list of many which are dubious. He subjoins the uses, which the natives of *America* make of these plants, principally borrowed from *Piso*. The whole is

ornamented, and rendered much more useful, by a plate, on which are engraven different views of the flower, and a figure of the leaf of each species.

The *Passion Flower* belongs to the *gynandrous* plants with five stamina, and the number of species, as they now stand in the system, is augmented to 26, without mentioning two others, described and figured as new, by M. *Jacquin*, who brought them from *Carthagera*. All the *Passion Flowers* yet known are natives of the warmer parts of *America* only, and not found in any other parts of the globe.

9. De ANANDRIA. E. Z. *Tursen*. 1745.

The history of a singular *Siberian* plant, which, during the time of flowering, was found not to open the *calix*; and was called *Anandria* by professor *Siegesbeck*, of *Petersburgh*, who had fancied that it was destitute of *stamina*, and having declared himself a strenuous opposer of the *sexual* system, thought, by the instance of this plant, to have overturned the whole doctrine of the sexes of plants; having written a treatise, in which he had asserted, that the *stamina* did not constitute the *essential* parts of the plant, and that the seed would become fertile without the influence of the *Pollen Antherarum*. This plant is *syngenesious*, and of that genus which we name *Coltsfoot*. It stands in the System under the name of *Tussilago* (*Anandria*) *scapo uniflora, subsquamoso erecto, foliis lyrato-ovatis*; and subsequent observations proved, that in a warmer

warmer situation than its native one, the *calix* would open, and shew a radiated flower. The controversy, which was managed in behalf of LINNÆUS by Dr. *Gleditsch* of *Berlin*, much extended the knowledge, and favoured the establishment of the *Linnean* system, at that time unwillingly received by many of the older botanists.

10. De ACROSTICO. J. B. Heiligtag. 1747.

A botanical dissertation on a genus of plants belonging to an extensive *natural* order, placed in the *Cryptogamia* class, which we call *Ferns*; and which were known to former botanists by the name of *Epiphyllouspermous* plants, since they chiefly produce their parts of fructification on the back of the leaf, or *frons*. After some general observations on the plants constituting this order, which have also been called *Capillary* plants, and shewing the place they hold, and their *characters* in the several systems of *Ray*, *Morison*, *Tournefort*, and LINNÆUS, the writer proceeds to an ample description of the species of *Acrostica*, of which he enumerates seventeen, with their synonyms. This genus is distinguished by having the fructification spread all over the surface of the leaf; and the number of species, in the last edition of the System, is augmented to thirty. They are mostly of *American* produce, three only being *European*, of which two are sparingly found in *Britain*. They are a singular set of plants, and have much excited the attention of botanists. A plate accompanies this tract, on which five of the uncommon species are delineated.

II. MUSEUM ADOLPHO FREDERICIANUM. *L. Balk,*
1746.

The subject of this paper is strictly zoological : It contains a particular description of 65 of the rarer kinds of animals, which were presented to the *museum* of the university by the late King *Adolphus* of *Sweden*, at that time hereditary prince. These descriptions being drawn up with sufficient accuracy, and regard to the rules of the *Linnean* system, and referred to in the subsequent zoology of *LINNÆUS*, yet retain their value. *Amphibia*, and *Fishes*, form the greater part of this collection : among the former we mention particularly an excellent description of the Chameleon, (*Lacerta Chamæleon*, Syft. 346.) ; of the *Amphisbæna Fuliginosa*, Syft. 392 ; of the *Crotalus Horridus*, or Rattle Snake : and among the latter, of the *Torpedo*, which has so lately excited anew the attention of electricians, as also of that remarkable fish called *Soldago* by the *Portuguese* (*Silurus Callichthys*, Syft. 506.) which *Marcgrave* and *Piso* say will travel in dry seasons across the land from rivulet to rivulet in quest of water. Two copper-plates accompany this tract.

12. SPONSALIA PLANTARUM. *J. G. Wahlbom.*
1746.

Whoever would see all the arguments for, and the result of, those experiments, on which the doctrine of the sexes of plants is founded, are referred to this dissertation ; as containing, by far, the most clear, comprehensive, and yet copious view
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of that subject. It is professedly a commentary upon the 5th chapter of LINNÆUS's *Fundamenta*, or *Philosophia Botanica*, from section 132 to 150 inclusive, and contains 49 pages. It is out of our plan to produce any detail of these arguments; suffice it to say, that although, from the writings of *Theophrastus* and *Pliny*, we learn that the ancients had some idea of an analogy in this respect, between the animal and vegetable kingdom, drawn perhaps principally from the artificial mode of fecundating the *date-tree*, yet, so crude and erroneous were their ideas, that in many instances they called those plants male or female, which modern discoveries have taught us are exactly the reverse. Indeed it does not appear, that any very precise ideas on this subject were established till late in the last century; and, were it a matter of importance to determine *to whom* applause is due for this discovery, the *English* might perhaps with justice claim this honour, and bestow it on Sir *Thomas Millington*, Savilian professor, who appears to have been the first that gave the hint to Dr. *Grew*; since whose time this doctrine has received so much light, that we presume few people can now doubt the following position, which briefly contains the whole of what is understood now by this analogy; namely, "That the influence of the "*farina* from the *antheræ* of flowers upon the "*stigma*, is essentially necessary to give fertility to "the seed." If there are any who yet wish to see what arguments may be adduced *against this* doctrine, they are referred to the *Anthologia* of *Pontedera*,

dera, and to the late Dr. *Alston's* Dissertation on Botany. It hath been before observed, that LINNÆUS was honoured with a premium from the Royal Academy of Sciences at *Peterburgh*, for his excellent Treatise on the *Sponsalia Plantarum*, in which he is thought to have most irrefragably proved his position.

13. NOVA PLANTARUM GENERA. [C. M. Daffow. 1747.

In this paper are described and established the natural characters of 43 new *genera*, all which were afterwards taken into the 5th edition of the *Genera Plantarum* of LINNÆUS, published in 1754.

14. VIRES PLANTARUM. F. Hasselquist. 1747.

Practical physicians have wished, and some have formed the idea that it is possible, to deduce the virtues of plants from their agreement in similar characters of fructification, in habit or agreement in *natural orders*, or classes. Mr. *Petiver*, long since, was among the first that hazarded some reflexions on this subject: see *Philosophical Transactions*, N^o 255, and *Lowthorp's* Abridgment, vol. ii. p. 704. And the very eminent Dr. HOFFMANN has a professed dissertation on it, in the fifth volume of his works, p. 58. It is the intention of the present paper, written by this ingenious, but unfortunate disciple of LINNÆUS, to extend and illustrate the same idea, by this commentary on the 12th chapter of the *Philosophia Botanica*; which contains the general doctrine of
this

this attempt, and an enumeration of those *natural* or *artificial* orders in botany, which are supposed to illustrate and confirm the possibility of attaining this desirable end. To mention a few instances of this agreement in character and qualities: The stellated class, in *Ray's* system, are mostly *diuretics*; the *asperifoliae*, are chiefly *demulcents*; the *umbelliferous* plants, which grow in dry places, are *aromatics*, particularly the roots and seeds; but if growing in wet situations, usually partake more or less of a deleterious quality. The *Icosandrous* plants of LINNÆUS abound with *pulpy* and *esculent* fruits: the *Polyandrous* are many of them poisonous: the *Syngenesious*, in frequent instances, intense *bitters*, &c. It must not be concealed, however, that there are not wanting those who consider both the *natural method* in botany, and the deduction of the virtues of simples from *these congruities*, as the *philosopher's stone* of the science; notwithstanding which, there is no attempt in the improvement of botany, or its true application to the uses of physic, which ought more strenuously and unremittingly to be pursued, than that of bringing to all possible perfection the purpose of this dissertation.

15. DE CHRYSTALLORUM GENERATIONE.

M. Kabler. 1747.

In this tract is discussed at large, that opinion which LINNÆUS early imbibed, and which led him to ascribe to the operation of one and the same

same principle, the regular polyedrous figure of all those bodies, called *Chrystals*, acting upon them during their suspension in an aqueous menstruum; and this he conceived to be equally the case, whether these bodies are what we usually call *saline*, or whether they are *lapidose*, *pyriticose*, or *arsenical*; or finally, whether they are such as are termed *metallic* salts. Hence arose his arrangement of figured *Spars*, *Selenite*, *quartzose Chrystals*, including all the *gems* under that *genus* of salt, to which their agreement in figure entitled them to a place. This opinion gave so much offence to mineralogists, that, most probably, it rendered his *System* in the mineral kingdom, much less acceptable than the other parts of that work had been. In this paper *lapidose* chrystals only are considered; many of which are figured, and described, and referred to the several salts with which they agree in figure. LINNÆUS's idea on this subject has been lately taken up, and pursued in a very extensive manner, by M. de Romé de Lisse, in an Essay printed at *Paris*, in 1772. It must be confessed, however, that the greatest difficulties attend the solution of this matter: how far the further consideration of the *volcanic* system, which is gaining ground in the minds of some philosophers and mineralogists, may elucidate the origin of certain figured bodies, which are said to have a *chrystalline* or vitreous basis, time only must shew; hitherto it seems to bid fairer towards solving some difficulties, than any foregoing hypothesis.

16. SURINAMENSIA GRILLIANA. P. Sund. 1748.

The description at large of 25 subjects of the animal kingdom, chiefly *Serpentes*, collected at *Surinam* by Mr. Gerret, famous for being among the first who introduced, and successfully cultivated, coffee in *America*, and who sent these curiosities to M. Grill, an opulent citizen of *Stockholm*, by which means they came finally into the museum of *Upsal*. We here meet with an excellent account of the *Rattle-snake*; and particularly a description and figure of the *Boa Constrictor*, that gigantic serpent, of which we have such copious and astonishing accounts in *Adanson*, *Piso*, *Kämpfer*, and others. The plate also presents a figure of the *Cæcilia Tentaculata*, Syst. 293; of the *Coluber Ammodytes*, Syst. 376; and of the *Egyptian Locust*, *Gryllus Cristatus*, Syst. 699. all which are amply described.

17. FLORA OECONOMICA. E. Aspelin. 1748.

There is scarcely any morsel in this collection more worthy of regard, or that has a more useful tendency, than this paper; which is intended to display, and really contains, in a compendious way, the uses of the indigenous plants of *Sweden*, whether in *Agriculture*, *rural Oeconomy in general*, in the *Arts*, or in *culinary uses*. It does not profess to deliver their medicinal qualities, that not being a part of the plan. The plants are enumerated in the order in which they are found in the *Flora Suecica*, but no botanical distinctions or disquisitions are here introduced. We have *no work on this plan extant in England*, and are per-

suaded that something of this kind, on a more extended scale, written in the language of the country, and adapted to common use, could not fail to meet with a favourable reception, and would certainly be highly beneficial, not only by disclosing matter of real and instant information to many who are ignorant of the various applications that have already been made of plants which are daily neglected, but, by exciting a spirit of investigation in general, would doubtless lead to new discoveries. An *economical Flora*, or *Herbal*, is what we have never yet seen; our works that bear the name of *Herbals* treat on plants and trees, as if their utility was alone confined to the purposes of physic, and even here, in a variety of instances, attribute to them virtues which neither their sensible qualities have justified, nor experience has ascertained.

We have observed that this work is confined to the native plants of the country, out of which, as an instance of the variety of subjects that are here mentioned as objects of economy in various ways, there are not less than three hundred that have a place in this catalogue.

18. *De CURIOSITATE NATURALI.* O. Soderberg,
1748.

This concluding paper of the first volume, is a discourse intended as an incitement to the study of natural history, by a train of well-connected arguments and observations, drawn from that admirable display of wisdom and goodness manifest
throughout

throughout all nature ; and from its dignity and importance, as so immediately connected with utility to mankind : from all which considerations, the author thinks it entitled to one of the most distinguished ranks among the objects of human enquiry ; and that, so far from being a frivolous pursuit, it is in every view one of the worthiest employments of the human mind.

AMCENITATES ACADEMICÆ. Vol. II.

1752. pp. 468.

19. OECONOMIA NATURÆ. [J. J. Biberger. 1749.

It is impossible in an abstract to do any proper justice to this excellent production ; the design of which is entirely physico-theological, and consequently its scope is various and extensive. The writer first considers, in general, the *Structure of the Earth*, its seas, mountains, &c. and the effects of the change of seasons on all parts of its surface, and on the elements : the disposition of the *Fossil Kingdom*, and the various origin of its several bodies, with their gradual transmutation ; from whence, in many instances, arise their different denominations with us ; in the *Vegetable Kingdom*, the various means by which the dissemination of seeds is effected, thereby cloathing in every climate the whole surface of the earth, and conducing to the preservation of animals : in the *Animal Kingdom* itself, the extraordinary increase of some, the paucity of others ; their means of preservation, and

and their use, even in their destruction, to the general economy of nature: all these positions he has illustrated and confirmed by apt examples, and finally draws this conclusion—that all nature is most harmoniously arranged, and adapted to produce, upon the whole, reciprocal good. This paper is among those translated by Mr. *Stillingfleet*.

20. *De TÆNIA.* G. Dubois. 1748.

At the time this treatise was written, the subject had more than usually engaged the attention of the *Swedish* naturalists and physicians, and particularly of LINNÆUS, and his colleague Dr. *Rosen*, the family of the latter having suffered much from this dangerous animal, as appears by his treatise *on the Diseases of Children*, lately rendered into *English* by Dr. *Sparmann*.

The author has here described and figured four species, all of which are found in the intestines of animals, chiefly in those of carnivorous quadrupeds; and unhappily two of these kinds, but more particularly the *T. Solium*, too frequently infest the human body. The specific differences of the *Tænia* arise from the number and situation of the mouths or suckers in each link of this compound animal, the history of which has employed the pens of many ingenious men, and is notwithstanding yet involved in considerable obscurity.

The Tape-worms most commonly infesting the human body, are those described by LINNÆUS under the names of *Tænia Solium*, and *Tænia Vulgaris*, Syst. Nat. p. 1323, both of which are not unfrequently

unfrequently found extended from the *duodenum*, almost through the whole tract of the intestines. Much controversy has been spent in determining whether these animals have any part that is analogous to the brain or head in other animals; our author affirms the contrary, considering them as *compound animals*, consisting as it were of a chain, every link of which is a perfect animal, furnished with a mouth, and all its proper organs, and capable, when separated from its original chain, of propagating its species, as if by a vegetative power, and independent of any *oviparous* or *viviparous* process. In this idea he is opposed by Dr. *Tyson*, who has figured the head of the *Tænia Solium* in the Philosophical Transactions; (see N^o 147, and *Lowthorp's* Abridgment, Vol. iii. p. 130;) as also by *Pallas*, in his *Elenchus Zoophytorum*, and by some other authors. The *Vermes Cucurbitini*, or gourd-worms of foregoing writers, are now however allowed to be the descending or posterior links of the *Tænia Solium*, and these, according to LINNÆUS, are again capable of extending themselves, and producing another chain. According to *Pallas*, and others, these joints are pregnant with *ova*. In either case the reason is at once seen why these noxious creatures are with such difficulty expelled from the human body. LINNÆUS however does not deny that they are capable of propagation by *ova* too; and says, they are found, though much smaller, in muddy springs; to which *Pallas* with difficulty assents. LINNÆUS's opinion however is confirmed by subsequent observations; and indeed

deed we cannot but observe, that without allowing them to exist elsewhere than in the intestines of animals, it is exceedingly difficult to account for the *locality* of the disease arising from these worms.

We cannot enlarge on this treatise consistent with our plan; it must be sufficient to observe, that this dissertation, besides being in itself highly satisfactory, may be considered as an *index* also to those writers that are most worthy of being consulted on the same subject.

21. LIGNUM COLUBRINUM. *J. A. Darelius. 1749.*

This is a critical enquiry to determine the species of that drug called *Lignum Colubrinum*, which it is said the *Indian Ichnæumon*, *Weesel*, or *Mungos*, (*Viverra Ichnæumon*, *β. Lin. Syst. 63.*) first pointed out to the *Indians*. This wood the *Zeylanese* use as an antidote to the poison of the Hooded Serpent, or *Naja*, called also *Cobra de Capello*; (*Coluber Naja*, *Syst. 382.*) of which *Kæmpfer* has given so extensive an history, as the most poisonous of all serpents. *Darelius* prefixes to his enquiry the history of both these animals, of which too many marvellous things have been related: he then examines into the pretensions of that drug, which had usually been sold in *Europe* under the name of *Lignum Colubrinum*, (see *Dale's Pharmacolog. p. 358.*) which is the *Strychnos Colubrina*, *Spec. Plant. 271.* and rejects its claim, inclining at length to bestow it on the plant described by *Kæmpfer*, under the name of *Radix Mungo*, p. 557. This plant was received into the *System* among
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the *Pentandrous* tribe, under the name of *Ophiorrhiza Mungos*, and is figured in the *Materia Medica* of our author. The root is exhibited in *India* and in *Zeylon*, not only as an antidote against the venom of this serpent, but against the bite of the mad dog, as also in putrid fevers. *Grimmius*, who lived long as a physician at *Columbo*, in *Zeylon*, professes to have made great use of it. Our author subjoins several preparations from this simple, and, from *Lockner*, presents us with the formula of the famous *Lapis de Goa*, in which the *Mungos* root stands as the first ingredient. He concludes with an enquiry into the effects of the spurious drug of this name, the result of which sufficiently agrees with what is related of the *Nux Vomica*, to which genus it is referred according to the sexual system.

22. RADIX SENEGA. *J. Kiernander*. 1749.

As the terror of the *Naja* is dispelled, in *Asia*, by the *Ophiorrhiza*, so is that of the *Rattle-Snake*, in *America*, by the *Senega*. After premising the history of the *Rattle-Snake*, (*Crotalus Horridus*, Syst. 372.) chiefly borrowed from *Catesby*, *Dr. Kiernander* gives a full botanical and medical history of this famous plant, which for so long a time the *Indians* concealed from the *Europeans*. The author then recites ten different vegetables, of which the *Europeans*, during their endeavours to come at the true *Rattle-Snake* root, tried the effects against this subtle venom. Some of these are said to have been not quite unavailing: at length *Dr. Tennent* discovered the secret, and

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found the plant to be a species of *Milkwort*; which stands now in LINNÆUS's works under the name of *Polygala Senega*, (Spec. Pl. 990.) and of this genus there are not fewer than 26 species known. The description of the *Senega* is accompanied by a figure of the plant. The root, which is the part alone used in medicine, affords an acrimony on the palate, perhaps unexampled in the whole *Materia Medica*. The author gives the analysis of the root, enumerates its effects as a *salagogue*, *diuretic*, and *expectorant*; the various preparations, and their use in inflammatory diseases, dropsy, gout, rheumatism; in a disease which he mentions as endemic in *Virginia*, under the name of *Marasmus Virginicus*, and finally as the great specific to the venom of the rattle-snake; to which end the *Indians* instantly chew it, swallow the juice, and apply the masticated root to the puncture. The root of the *Polygala vulgaris*, which grows so plentifully in *England*, appears from experiments to possess the qualities of the *Senega*, but in a far weaker degree.

23. GENESIS CALCULI. J. O. Hagstrom. 1749.

Before Dr. *Hagstrom* comes to the immediate consideration of the origin of the *Calculus* of the urinary bladder, he premises some observations on calcareous substances in general; and enumerates the several kinds of calculous concretions, and their situations in the animal body: such are the *Calculus Urinæ*; *Salivæ*; *Pulmonum*; *Gastricus*; *Fellis*;

Fellis; and the *Calculus Podagræ*. He then considers the component parts of that *Fæx Chyli*, or *Lixivium*, the *Urine*, and the changes to which it is liable, in smell, taste, and colour, by the different *ingesta*; under which article he mentions a singular fact of a gentleman, who after having laboured under an inveterate acidity at the stomach, for which he had taken large quantities of chalk, found his urine altered so as to have entirely a milky appearance. In considering the immediate generation of the *Calculus*, he adopts the *Boerhaavian* theory, and ascribes it to *crystallization*: this leads him to consider all those circumstances which favour and accelerate this mode of concreting, and to seek for somewhat analogous thereto in the human body, as predisposing causes to this malady; which he finds in *Atonia*, and the use of acid and fermented liquors. He finishes the theory by some curious and apt reflections on the great analogy between this disorder and the gout, and their transitions.

In the therapeutic part, notwithstanding all that had been written relating to the power of alkaline medicines in dissolving the connecting gluten, and thus promoting the decomposition of the *Calculus*, the author does not allow them so much merit as hath been attributed to them by many writers. He is inclined to give more efficacy to bitters, particularly as *Prophylastics*, from the idea of their striking more immediately at the *Atonia*; and adduces two examples, communicated to him by the President LINNÆUS himself, of the use of the

Essentia Absinthii in this dreadful disease. This disquisition concludes with an observation on a milk-diet in the stone and gout, the efficacy of which he confirms by two well-adapted cases; which however, agreeably to foregoing observations, prove the necessity, in the gout, of adhering to the regimen, when once adopted, throughout life. One of these affords a melancholy lesson of the danger of deserting it, in the case of a *French* general, who, after twenty years freedom from the disease, at the age of 70, died in consequence of a fit brought on by *one* plentiful meal of animal food.

24. GEMMÆ ARBORUM. P. *Loëfling*. 1749.

This gentleman, who afterwards, at the recommendation of LINNÆUS, obtained a pension as naturalist to the King of *Spain*, and died in his service in *America*, has here given us a curious and elaborate disquisition on the *Buds* of trees, a part in vegetables which, till this time, had been less attentively examined than many others.

Gems or *Buds* are small rounded parts, made up of scales, differently arranged, situated commonly on the stem, or branches of trees, and containing, in epitome, the rudiments of either the future *flower* singly, the *leaves* singly, or both *flower* and *leaves*. Analogous to the *flower*, and *leaf-bearing Gem*, which is the most common, is a *Bulb* placed at the root of many plants, inasmuch as both contain a future perfect plant, requiring only envelopement, by the genial effect of heat. These

Gems

Gems and *Bulbs* are called by LINNÆUS *Hybernacula*, as inclosing the embryo during the winter, and the former are almost confined to trees of the colder countries. After a requisite account of the subject in general, Dr. *Loëfling* exhibits a classification of the *Gems* of 108 species of trees and shrubs, founded on the different *structure* and *situation* of the various kinds. In consequence of this arrangement, the species of any of these trees is supposed to be capable of being discovered in the winter season, and state of defoliation, by the buds alone.

25. PAN SUECUS. N. L. *Hesselgren*. 1749.

The originality, and singular good tendency and design of this paper, induced the writer of this volume, several years ago, to throw it into a form more immediately adapted to an *English* reader, by referring to *English* authors, and it was then laid before the public in the Gentleman's Magazine for the year 1758, accompanied with some notes and general observations. This has enabled him to annex it, in a still more enlarged form, to this volume.

26. SPLACHNUM. L. *Montin*. 1750.

Mr. *Montin*, at the instance of LINNÆUS, had made an expedition the preceding summer into *Lapland*, and, amongst other natural productions, had brought back this curious and uncommon moss, and in this paper gives a complete botanical history of its *genus*, called *Splachnum*, the first

species of which, singular for the elegant form of the heads, had been first discovered by an *Englishman*, in *Norway*, and communicated to Mr. *Petiver*. There are three others, of which a less specious kind is not uncommon on our bogs in *England*.

Mr. *Montin*, in this journey, had an opportunity of confirming an opinion, which LINNÆUS had before conceived, relating to the cause of a most excruciating *colic*, to which the *Laplanders* are often subjected, and which he describes very particularly in the *Flora Lapponica*, p. 69: when treating of the *Angelica*, which, among other simples, is used as a remedy. Mr. *Montin* thinks it clear, that it arises from swallowing in their waters the *Gordius Aquaticus*, a species of worm described in the *Fauna Suecica*, N° 2068, well known to *Gesner*, and the older writers, under the name of *Vitulus Aquaticus*, and *Seta Aquatica*, as being no thicker than a horse hair.

27. SEMINA MUSCORUM. P. J. Bergius. 1750.

Dr. *Bergius*, since professor of pharmacy and natural history at *Stockholm*, has, in this tract, thrown considerable light on the fructification of the second order of vegetables in the *Cryptogamia* class: much more however has been done since the time he wrote, and it is now thought that the tribe of Mosses have separate male and female flowers; the former of which usually stand on long pedicles; the latter are as yet, in most genera, very obscurely investigated: and LINNÆUS himself appears to be doubtful, whether the dust which

we observe in the heads of mosses, is the *Pollen Antherarum*, or the seeds themselves.

28. MATERIA MEDICA E REGNO ANIMALI.

K. J. Sidren. 1750.

This enumeration contains 67 subjects, and is executed exactly on the plan of our author's *Materia Medica e Plantis*, of which we have before spoken.

29. PLANTÆ CAMSCHATCENSES RARIORES.

J. P. Halenius. 1750.

A description at large of 26 new *Siberian* plants, sent to LINNÆUS by Dr. Gmelin, who had spent almost 10 years, by the command, and at the expence, of the Empress of *Russia*, in investigating the natural history of that kingdom. Amongst these, we may particularly remark that foetid plant, called *Cimicifuga fetida* (Syft. Nat. ii. 659,) so offensive, and even poisonous, to those insects from which it receives its name. A decoction of this drastic herb is used in *Siberia* (as Gmelin informs us, *Flor. Sib.* iv. p. 183.) with great success in dropfies.

It is a curious remark which is suggested by our author, that in journeying eastwards in *Kamtchatka*, the botanist sees his nearer approach towards *North America*, by the habit of many of the plants; and hence arose a presumptive proof of the vicinity of the two continents, before real discoveries had confirmed the truth of it. The author has

given a list of several plants, that are actually the same as are found in *North America*.

30. SAVOR MEDICAMENTORUM. J. Rudberg.

1751.

After having premised some general observations on all the antient sects of physicians, and felicitated the present age on the rejection of all hypotheses and opinions not supported by experiments; and considered the general physiology of the human body, Dr. *Roberg* proceeds to his subject, which may be regarded as a very instructive comment on the 363d *Aphorism* of the *Philosophia Botanica*, "*Sapida in fluida et solida agunt*;" under which all vegetable simples are arranged into eleven classes, founded on distinctions arising from their sensible qualities, principally as they affect the taste, as follows:

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|--------------|---------------|
| 1. Sicca. | 7. Dulcia. |
| 2. Aquosa. | 8. Pinguia. |
| 3. Viscosa. | 9. Amara. |
| 4. Salsa. | 10. Acria. |
| 5. Acida. | 11. Nauseosa. |
| 6. Styptica. | |

Under each of these heads respective simples are arranged, and the comment is subjoined, explaining the mode of their *action*, and *effects*, both on the *solids* and *fluids*; and frequently specifying the particular diseases in which they are employed. A set of apt corollaries are added; and, upon the whole, this little tract is by no means unworthy the

the attention of medical students in general, and especially of those who wish to comprehend the *Linnean* theory of physic.

To this volume of the *Amœnitates* are subjoined the three orations of LINNÆUS, which, as they make part of his own proper works, have been spoken of in the foregoing pages of this volume.

AMCENITATES ACADEMICÆ. Vol. III.

1756. pp. 464.

31. NOVA PLANTARUM GENERA. L. J. Cbenon,
1751.

Chiefly a description of new *genera* and species of plants, brought from *North America* by Dr. *Kalm*, who had spent three years in that country. Previous to the descriptions, we have a brief mention made of those who had treated upon the plants of *North America* before *Kalm*. These were *Cornutus*, the first writer, in 1625; *Banister*, in *Ray's history*, 1680; *Plukenet*, in 1691; *Bobart*, in 1699; *Ray*, in his supplement, 1704; *Catesby*, 1731; *Gronovius*, or rather *Clayton*, 1739; Dr. *Mitchell*, 1748; Governor *Colden*, 1743. By the industry of these writers, botany had been augmented with 77 new *genera*, to which *Kalm* added eight. As Dr. *Kalm's* plants are all now received into the System, any further account of this paper is superseded. A plate is added, on which are engraven seven of the rarer species.

32. PLANTÆ

32. PLANTÆ HYBRIDÆ. J. Haartman. 1751.

The subject of this paper is very interesting in botanic science; and being as yet somewhat problematical, has exercised the pens of several ingenious men, but of none perhaps more successfully than that of the late Dr. Gmelin, in his *Sermo academicus, de novorum vegetabilium ortu*. Tubing, 1749. Mr. Haartman allows the possibility of this origin or new creation of vegetables, arising from the influence of the *farina* of one species upon the *pistil* of another, either of the same or of a different *genus*, thus producing what is called a *Hybrid* plant. Instances of this admixture, and production of *monsters* in the vegetable kingdom, have been frequent; but, as in the animal kingdom, they have not usually been found to perpetuate themselves by producing fertile seeds. The general effect of culture, and the immense number of species, with which, particularly, many of the *African genera* abound, such as the *Geranium*, *Erica*, *Mesembryanthemum*, &c. very much favour this hypothesis. A catalogue is given of 34 species of well-known plants, supposed to have originated in this manner, specifying those also from which they are suspected to have sprung; and a comparison is made between the several parts and habit of each, with the corresponding *hybrid* offspring, to shew the probability of this origin. Another list of many other plants follows, in which the traces are not so strongly marked. Among the *English* indigenous plants, thought to have thus originated,

we mention the *Veronica Hybrida*, or *Welch Speedwell*, which is believed to have arisen from the *Officinalis* and the *Spicata*; as the *Sibthorpia Europæa* is from the Golden Saxifrage, and Marsh Pennywort.

33. OBSTACULA MEDICINÆ, J. G. Beyersten;
1752.

An enquiry into, and a brief discussion of, the causes that have hitherto impeded the progress of physic. An ingenious and well-conducted plan, and most laudable design, which all those who wish well to the art would desire to see still farther illustrated, by some such character as would command attention, and give the subject that importance which it demands. Among other obstacles, the writer mentions—the force of custom in directing prescription; theories founded on hypotheses; neglect of nosology; too little attention to reputed poisons; timid prescription; too small doses; ignorance of apothecaries in botany, and the *Materia Medica*; use of compound medicines; ignorance of the natural classes of plants; &c.—all which positions are confirmed by suitable reflexions, and examples.

34. PLANTÆ ESCULENTÆ PATRIÆ. J. Florb.
1752.

A list of such native plants of *Sweden* as have been, or in some way or other may be, objects of culinary use, principally as aliments; to which are added Condiments, and *Succedanea*, to several
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of those articles of exotic luxury, which the opulent nations of *Europe* import from distant parts of the world. It is happily not an object of importance, much less of necessity, to consult such a catalogue in this nation; but it would be matter of pleasure and surprise to many, to see the great number of vegetables, which, in a country from its situation far from fertile, may supply the want of bread. The subjects of this tract amount to 127, many of which would demand a place in an *economical herbal*, adapted to a much milder climate.

35. EUPHORBIA. *J. Wiman.* 1752.

A complete botanical history of one of the most extensive *genera* of plants, several of which have a place in the *Materia Medica*, which, in the *Linnean* system, stands in the *Dodecandrous* class, and furnishes greater instances of anomalies in the habit of the species, than perhaps is elsewhere to be met with; as it contains not only the *Euphorbium*, the *Esula*, and *Cataputia* of the shops, but also all the *Tithymali*, or Spurges, of authors. Fifty-three species are described in this dissertation, and their synonyms delivered, together with a general account of their uses in physic. In the *Species Plantarum* this genus is augmented to the number of 62 kinds, to which probably more might be added from *Burman's Flora Indica*. At this day, the *Euphorbia* are but little used; internally, scarcely ever: their extreme acrimony, and drastic powers, being too unmanageable.

36. MATERIA

36. MATERIA MEDICA E REGNO LAPIDEO.

J. Lindbult. 1752.

Under 72 heads, Dr. *Lindbult* has comprised all the simples of the *Materia Medica* from the fossil kingdom, digested exactly in the method observed by LINNÆUS himself, in his separate publication of the vegetable *Materia Medica*.

37. MORBI EX HYEME. S. Brodd. 1752.

Preceding the history of the diseases arising from winter cold in *Sweden*, Dr. *Brodd* gives a general account of the effects of intense cold on the animals of the country, in changing their colour, diminishing the size of the breed in various species; and in *Lapland*, he thinks it is instanced in the human race itself: the state of the atmosphere; the production of meteors; differences observable in the particles of the snow; effects of various and additional degrees of cold on the ice of lakes, &c.; extraordinary appearance of the *Aurora Borealis*; prognostics of severe winters; and signs of the approaching remissions of cold; with other curious particulars.

The diseases of the winter season in *Sweden* are more particularly such as follow: *Perniones*, or Kibes, unusually painful and untractable; for the cure, among other applications mentioned, is the diluted marine acid, recommended by LINNÆUS himself, who had found it useful among the sailors when he was physician to the fleet; but this cannot be used when the disease is advanced

to its ulcerated state. *Paronychia*, or Whitlow, of various kinds, very frequent, and not seldom attended with dangerous consequences. *Congestio Hyemalis*, a species of Catarrh extremely common, and the source of worse diseases, usually arising from sudden transitions from heat to cold, and incautious exposure to the latter: observations on this disorder from the *Iter Westro-gothicum* of LINNÆUS. *Coughs*, universal, sometimes to the entire disturbance of all public assemblies. *Pleurisies*, especially among the country people, who indulge in strong liquors. *Peripneumonies*, particularly considered as endemic with the inhabitants about the copper-mines. The tract concludes with a compendious view of the effects of cold, and the phenomena of winter season, in a set of corollaries, and a mention of the hard winters in *Europe*, in 1586, 1665, 1684, 1709, 1740, 1752. In the latter, the lowest point of the thermometer, at *Upsal*, was 31 of *Celsius's*, equal to about 24 below 0 in *Fahrenheit*.

28. ODORES MEDICAMENTORUM. *A. Wablin.*

1752.

An ingenious illustration of the doctrine, which teaches, that those different sensations excited in the organs of smell by different odours, will lead to the explanation of the qualities inherent in such bodies; and that from thence they may be classed, and their general effects on the human body deduced. After a train of general explanatory and physiological observations, Mr. *Wablin* introduces

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Sir Francis Bacon's contrast between youth and old age, in order more clearly to illustrate (which he does in a familiar, but striking manner) the effects of wine and spirituous liquors in their various and progressive operation on the nervous system, from their first exhilarating effect in a moderate quantity, to their intoxicating and fatal issue. This he makes, in some measure, the basis of his reasoning on the effects of other odorous substances, which he at length arranges into seven classes.

1. *Aromatici*. Cinnamon; Seeds of Amomum, &c.
2. *Fragrantes*. Saffron; Jasmin Flowers, &c.
3. *Ambrosiaci*. Musk; Musk Crainsbill, &c.
4. *Alliacei*. Garlic; Asa Foetida, &c.
5. *Hircini*. Herb Robert; Stinking Orach.
6. *Tetri*. Opium; Henbane; Corianders.
7. *Nauseosi*. White and black Hellebore; Tobacco.

The specific effects of each of these classes are then briefly explained, and their reputed mode of operation. This paper may be considered as a comment on section 362 of the *Philosophia*, and properly accompanies the *Sapor Medicamentorum*, before-mentioned.

39. NOCTILUCA MARINA. C. F. Adler. 1752.

Mr. Adler, who went as surgeon in a Swedish East India ship to China, in 1748, first gives an account of those authors who have treated on the luminous appearance of the sea water in storms, and in the current occasioned by the course of ships;

ships; and then proceeds to inform us, that it was not till the year 1749, that this phenomenon was certainly discovered to be owing, at least in many parts of the ocean, to an inconceivable number of minute insects. One of these is the subject of this paper, and is completely described, and a figure given, as augmented by the microscope. It is of the *Vermes* class, and the *Mollusca* order, and stands in the *System* under the name of *Nereis Noctiluca*, p. 1085, being the first of eleven species there described. Its real length does not exceed the 6th part of an inch.

Later writers have thrown more light on this discovery, by exhibiting a great variety of these living *Phosphori*.

40. RHABARBARUM. S. Ziervogel. 1752.

A botanical and medical history of the *Rheum Undulatum*, Sp. Pl. 531. described here under the idea of its being the true *Rhubarb*, having been sent from *Russia* as such by Professor Gerber to Consul Sprekelsen at *Hamburgh*, and by him introduced into many gardens. The medical history therefore of this plant must be transferred to the *Rheum Palmatum*, which is now generally believed to be the true *Rhubarb*, of which a description and figure may be seen in the *Phil. Trans.* vol. lv. p. 290. communicated by Dr. HOPE, professor of botany at *Edinburgh*, who raised it from seeds sent him by Dr. Mounsey, in 1763, and under whose culture the plant has greatly thriven, and yielded large quantities of good *Rhubarb*. Mr. Pennant has

has told us, in his late *Tour*, that the Duke of *Atbol* has produced it in great perfection, and probably, if particular interests did not militate against it, the importation of this root might soon become unnecessary. It is not wonderful that the former plant should have been taken for the *true* Rhubarb, as both grow in *China*, and about the famous wall.

41. CUI BONO? C. Gedner. 1752.

To what purpose are all the researches of the naturalist? A question which only ignorance or incuriosity can dictate. We will not pay our readers so ill a compliment, as to suppose they need the conviction here referred to. Nevertheless, if there are any who wish to see what reasons may be alledged by the naturalist, against those who object the frivolousness and inutility of his researches, they will most probably receive some satisfaction from an attentive consideration of this paper, which is incapable of abridgment, and may be properly read with the 18th, *Curiositas Naturalis*, and 20th *Oeconomia Naturæ*. The author has introduced a pleasant and instructive allegory, which LINNÆUS himself was wont to use on these occasions.

42. NUTRIX NOVERCA. F. Lindberg. 1752.

This tract is very recommendable, as containing a compendious view of every material argument that has been urged to prove the propriety and advantage of mothers nursing their infants at

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their

their own breast. Several observations on the diseases of children are interspersed, and some local observations, which lose their force in this country.

This subject has been so ably discussed by several masterly pens in this kingdom, that we shall only observe, respecting the present tract, that Dr. *Lindberg* allows more force, than some of our own writers, to those arguments which admit of diseases and temperaments being transmissible from nurses to their foster-children.

43. HOSPITA INSECTORUM FLORA. *J. G. Forskahl.*
1752.

The author of this paper begins by giving a general history of all the material writers on Insects, and the method in which they have treated the subject, whether in relation to the *metamorphoses* and economy principally, in the manner of *Swammerdam*; or by giving a detail of the *species* at large also, as *Ray*, *Reaumur*, and *De Geer*, have done. He then does due honour to the Queen of *Sweden*, on account of the magnificent museum which her majesty had constructed at the palace of *Drottningholm*, which is very superb in *Insects*, *Shells*, *Corals*, and *Chrystals*, &c. He next exhibits his plan: it consists in arranging all such insects as are natives of *Sweden*, each under the plant on which it is found, or on which it feeds; the references being made to the *Fauna*, and *Flora Suecica* of *LINNÆUS*. It would be highly acceptable to those who cultivate this branch of natural history, to see this arrangement augmented by the numerous discoveries that

that have been made since the publication of this tract, as it is a part of the history of insects not sufficiently attended to before; and nothing would conduce more to extend and facilitate the knowledge of it, or lead more effectually to the means of destroying the noxious species.

44. MIRACULA INSECTORUM. G. E. Avelin. 1752.

Intended to awaken curiosity, and excite attention to the study of insects, by pointing out the extraordinary instincts and properties with which particular kinds are endued; many of whose operations were inexplicable, and frequently attributed to other causes.

Nothing exemplifies this truth more than the history of a minute insect, or rather worm, of which we have, in this dissertation, the first proper intelligence; it is very curious, and worthy of notice. In *Finland*, *Bothnia*, and the northern provinces of *Sweden*, it was not unfrequently that people were seized with a pungent pain, confined to a point, in the hand, or other exposed part of the body, which presently increased to a most excruciating degree, and hath sometimes been suddenly fatal. This disorder was more particularly observed in *Finland*, especially about boggy and marshy places, and always in autumn. At length it was discovered, that this pain instantly succeeded somewhat that dropped out of the air, and in a moment penetrated and buried itself in the flesh. The *Finlanders* had tried variety of applications to no purpose, until at length a poultice of curds, or

cheefe, was found the most effectual in easing the pain; and the event confirmed, that the insect was allured by this application to leave the flesh; as on its removal, this worm, no longer than the sixth of an inch, was found in it, and thus the cause of this painful disease explained. LINNÆUS himself once suffered from this animal the effect here spoken of: but we owe the complete history of it, and its place in the System, to Dr. SOLANDER, who gave it in to the Royal Academy of Sciences at *Upsal*. This worm stands in the System under the name of *Furia Infernalis*, p. 1325; but by what means this creature is raised into the air, is as yet unknown.

45. NOXA INSECTORUM. *M. A. Baæckner*. 1752.

A curious and useful paper, particularly specifying all those insects that are more immediately hurtful to animals and vegetables. They are classed in eleven divisions, according to the several subjects on which they prey, or to which they bring devastation.

1. Such as are particularly offensive to man. Under this head, the author seems inclined to favour that opinion which Mr. *St. André*, and some other *French* physicians and philosophers have held, in ascribing to *Acari* the cause of many cutaneous and contagious diseases.

2. Such as are destructive within doors, to furniture, cloaths, grain, &c. Among these is particularly mentioned the Seed Beetle, (*Bruchus Pisi*, Syst. 604.) the cause of great destruction to
pease

pease in *Pennsylvania*, &c. and which has found its way into southern *Europe*. See also *Kalm's Travels*, i. p. 176, *English* edition.

3. To fruit-bearing trees and culinary herbs.

4. To trees, woods, stove and green-house plants.

5. To corn-fields, pastures, &c.

6. To horses, horned cattle, and other animals, &c.

The subjects of these three last papers are of great importance in rural economy, and would come with all possible propriety into an *Economical Herbal*, that should specify, in treating upon each plant, the species of insect which inhabits or feeds on it.

46. VERNATIO ARBORUM. *H. Barck*, 1755.

A curious essay, perhaps the first on the subject, relating to the *Leasing of Trees* in *Sweden*, being the result of a variety of observations, made at the request of LINNÆUS himself, in almost all the provinces of that kingdom, and intended to lead, as if by the dictates of nature, to the true time of committing the grain to the earth. A table is exhibited, shewing at one view the days on which 19 species of trees, all natives of *Sweden*, put forth their leaves in three successive years. The same table shews also the day on which *Barley* was sown and reaped in all the same provinces. From another table it appears, that at *Pitba*, which lies in about 63 degrees north, from the average of 12 years, there intervene 85 days between the sowing

of barley and its harvest ; and at *Upsal*, in 60 degrees, the average of six years turned out to be 105 days. It is concluded, upon the whole, that in *Upland*, the leafing of the *Birch-tree* should direct the time for sowing barley ; but, that different trees will best indicate the time in different places. Another curious observation follows from this paper : that, notwithstanding the difference in the number of days between the ripening of barley in *Lapland* and in *Upland*, it will be found that the greater *length* of days in the former country, gives a balance of sun equal to the greater *number* of days in the latter.

47. INCREMENTA BOTANICES. *J. Biuur.* 1753,

A concise history of the rise, fate, and progress of botanic science, from the first traces of it to the present time ; divided into four periods or epochs. The first includes only the antients, by whom are understood *Aristotle*, *Theophrastus*, *Dioscorides*, and *Pliny* ; who, as compilers chiefly, did little but deliver the tradition of the times ; and whose plants, after the commentaries of a century, cannot be known by their descriptions to this day, so little had they extended their ideas to specific distinctions ; yet we must venerate their writings, as the only remains of this science transmitted to our times. The second period commences with the restoration of letters, after the taking of *Constantinople* by the *Turks*, beginning with *Brunfelsius*, and ending with the *Baubines*. The third, which is called the period of *Systematics*, is continued

tinued to the time of LINNÆUS, who effected that great reformation in the whole science, by which it is fixed as on a new basis. The conclusion of this paper contains some information relating to the introduction of figures cut in wood for the old herbals; whence it appears, that *Plantin*, the famous printer of *Antwerp*, monopolized almost all the figures of this kind during his time, and became the principal printer in his day for botanical books. By such means *Norton*, the printer of *Gerard's* herbal, procured from *Frankfort* all the figures we see in his book, which had before served for an edition of *Tabernamontanus's* herbal in 1588.

48. DEMONSTRATIONES PLANTARUM. J. G. Hojer.
1753.

Intended principally for the use of those pupils who attended the botanical lectures in the *Upsal* garden, consisting chiefly of a list of the exotics therein cultivated, as they stood in this year, amounting to near 1450 distinct species, which, in 59 deg. 51 min. N. latitude, is no inconsiderable number; all double flowers and varieties being entirely excluded. After the invention of trivial names, this list is the first specimen of the use of them in forming compendious catalogues, and is at once an evidence of the utility of them. There is an observation in this paper which may appear somewhat paradoxical to some readers: several of the plants that are natives of southern *Europe*, produced seeds this year, without shewing any *corolla*; such were

two *Cisti*, &c. It may seem strange too that *Lapland* and alpine plants should perish in the same situation through cold, but it is true; and the fact is, that in their *native* situations, they are, at the change of season, instantly covered with snow, and thus defended from injury.

49. HERBATIONES UPSALIENSES. *A. N. Fernander.*
1753.

As the foregoing catalogue comprehends those of the garden, this exhibits the indigenous plants of the neighbourhood of *Upsal*, as they occur in the simpling excursions which the professor made with the botanical students, and were usually performed in about eight days during the course of each summer.

50. INSTRUCTIO MUSEI. *D. Hultman.* 1753.

The method of constructing a museum for the purposes of natural history in all its branches, with directions for collecting, preserving, and disposing the subjects. An enumeration of the best repositories of this kind in *Sweden*: such is that of the *Queen*, rich in shells, insects, and corals; that of the *King*, in amphibia, fishes, animals of the *Vermes* class, in spirits; and the birds of *Sweden*: that of Count *Tessin*, abounding in fossils and gems, shells, pictures, &c.: that of Chancellor *Gyllenborg*: that belonging to the Royal Academy; *Stobæus's* at *Lunden*; and *Ziervogel's* at *Stockholm*. The method of drying and preserving plants

plants for an *Hortus Siccus* : those of former celebrated botanists enumerated. A method, perhaps more curious than useful, of casting an artificial plant, by forming a mould with plaister over a real plant placed in a vessel, then burning the inclosed plant to ashes, which are to be shook out, and the cavity filled with melted silver.

This little tract has been published in *Holland*, for the use of merchants who deal in the subjects of natural history ; and something of the same kind has been lately done here.

AMCENITATES ACADEMICÆ.

Vol. IV. 1760. pp. 600.

51. PLANTÆ OFFICINALES. N. Gabn. 1753.

The scope of this paper is entirely *pharmaceutical* ; and howsoever it may be superseded at present, it must have been very useful at the time of its publication, having been drawn up for the benefit of the apothecaries in *Sweden*, in consequence of some new regulations intended by the royal college of physicians, under the presidentship of Dr. *Beck* : and it was also highly acceptable to others, as being probably the first list of the *medicinal* plants, to which the *Linnean* synonyms had been accommodated. This paper contains,

1. A catalogue of the vegetable simples of the *Materia Medica*, amounting to near 580, specifying the parts of each used in medicine ; to which is opposed the *Linnean* generical and *trivial specific* name, from the *Species Plantarum* ; marking also,

also, by a different character, all such as the author thinks might be expunged. Then follow directions for rightly gathering and preserving the several plants, or such parts of each as are in use.

2. A list of such *simples* as grow spontaneously in *Sweden*; many of which had needlessly been imported.

3. Lists of such as might advantageously be cultivated for medicinal purposes; to which is finally added, a list of such drugs as are imported from the several distant quarters of the globe.

52. CENSURA SIMPLICIUM. G. J. Carlbohm. 1753.

A very instructive paper, consisting, after some pertinent observations, principally of two lists of *simples*: The first, such as the writer thinks might without detriment be expunged from the *Materia Medica*. The second, such as might advantageously be received into that catalogue; their virtues having been sufficiently ascertained to justify such an introduction. To this latter, the author has subjoined, under every article, the quality of the simple, and his authority in general for allowing each its designed rank. A paper of this tendency is not unworthy the observation of all those who would improve and enrich the *Materia Medica*; and probably considerable additions might be made to this list. We add the names of these *simples*.

Acmedla,

<i>Aemella.</i>	<i>Lapathi sanguinei rad.</i>
<i>Actææ radix.</i>	<i>Lauro-cerasi folia.</i>
<i>Alkannæ rad.</i>	<i>Linum catharticum.</i>
<i>Baccæ Norlandicæ.</i>	<i>Linnææ herb.</i>
<i>Bella donna.</i>	<i>Melissa canariensis.</i>
<i>Britannica herb.</i>	<i>Mentha piperita.</i>
<i>Chamæmori bacca.</i>	<i>Monardæ herb.</i>
<i>Campefcantum lign.</i>	<i>Muscus caninus.</i>
<i>Camphoratæ herb.</i>	<i>Muscus cumatilis.</i>
<i>Cassinæ folia.</i>	<i>Myrti brabantici herb.</i>
<i>Ceanothi rad.</i>	<i>Pedicularis.</i>
<i>Collinsonia.</i>	<i>Peraguæ folia.</i>
<i>Coridis herb.</i>	<i>Phytolaccæ suc.</i>
<i>Conyzæ herb.</i>	<i>Profluvii rad.</i>
<i>Cotulæ herb.</i>	<i>Ribes nigrum.</i>
<i>Diervilla.</i>	<i>Sabadillæ sem.</i>
<i>Dulcamara.</i>	<i>Saponaria nuclei.</i>
<i>Elaterium album.</i>	<i>Scrophulariæ aquat. h.</i>
<i>Faba Ignatii.</i>	<i>Senegæ rad.</i>
<i>Fungus melitenfis.</i>	<i>Serpentum rad.</i>
<i>Galium luteum.</i>	<i>Sophora.</i>
<i>Geum palustre.</i>	<i>Uvæ Urfi fol.</i>
<i>Hypocistis.</i>	<i>Vitis Idææ bac.</i>
<i>Juglandis fruct.</i>	<i>Vulvariæ herb.</i>
<i>Lobelix rad.</i>	

53. CANIS FAMILIARIS. *E. M. Lindecrantz. 1753.*

This natural history of the *Dog*, was one of the first complete exemplifications of zoological description, according to the principles of the *Linnaean* school, as laid down in the *Methodus Demonstrandi*. The writer considers the whole race as reducible

reducible to one species, and distinguished from other congenerous animals, such as the *wolf*, *fox*, *hyena*, &c. not only by the curvature of the tail, which is usually to the left, but by the disposition of the *Suturæ Velleris*, or ridges formed by the meeting of the several courses of hair on divers parts of the body; and the number and situation of the *Verruæ*, or, warty risings in the face. In these distinctions, heretofore unnoticed, all the varieties of this animal agree. Eleven varieties of the *dog-kind* are here specified, after which the properties and uses, together with the whole of the economy of this *faithful* animal, are fully set forth, and his diseases described. Our author tells us, that the *Laplanders* and *Dalekarlians* are in possession of some secret by which they instantly disarm the most furious dog, and oblige him to fly with all his usual signs of fear, becoming silent at once, and dropping his tail. This art, however, is said not to be unknown in *England*.

54. STATIONES PLANTARUM. A. Hedenberg. 1754.

The intention of this paper is to prove, that the knowledge of the *Natale Solum*, the natural places of growth of plants, is the true foundation on which the art of gardening successfully must be built. The author laments that botanists and writers of *Floræ* have been too remiss in their observations of this kind; whence numbers of exotic seeds and plants have failed to produce flowers, or to perpetuate themselves in gardens. He mentions a remarkable instance in the *Nitraria Scheberi*,
(Spec.

(Spec. Pl. 638.) which remained destitute of flowers for 20 years in the *Swedish* gardens, at length LINNÆUS rendered it fertile, by means of salt scattered about the roots. The knowledge of the *Stationes Plantarum* is also equally useful to the practical botanist, in assisting his researches.

Every plant has its natural situation and soil, in which alone it will thrive, and out of which, in many instances, no care or culture will preserve it alive. The knowledge of this axiom, as far as respects indigenous plants, is applicable to purposes of agriculture, and with this view the author has given an arrangement of the *Swedish* plants, divided into six classes, according to their several places of growth, as follows :

- | | |
|-----------------|-------------------|
| 1. Aquatics. | 4. Upland plants. |
| 2. Alpine. | 5. Mountainous. |
| 3. Wood-plants. | 6. Parasitic. |

These are again subdivided ; the aquatics, into *marine, maritime, marsh, bog plants*, &c. after which follows the definition of the terms, explaining the nature of these different soils and situations.

55. FLORA ANGLICA. J. O. Grusberg. 1754.

At the time of the publication of this paper, the *Linnean* system of botany had made but small progress in *England* ; to such however as had adopted it, this must have been a very acceptable present, as being the first arrangement, in the *Linnean* method, that had been given to the *English* plants ;

plants; as also the first of those compendious *Flora*, in which the newly-invented *trivial* names had been exemplified, and which have since been much used, greatly to the emolument of the science.

The author first discusses the utility of such local catalogues, and of adhering to the *trivial* names: he then briefly describes the climate of *Britain*, and its different soils and elevations, as favouring the growth of particular plants; enumerating some of those which are *peculiar* to *England*; and in what way those of *Sweden* differ from ours. He says *Sweden* abounds more in *alpine*, *upland*, and *wood-plants*, than *England*, which excels in *marine* plants, and such as affect a chalky soil, of which latter *Sweden* is almost destitute.

Having given due praise to the *English* botanists; and particularly to Mr. RAY, he subjoins the catalogue; in which there is a reference from each *Linnean* name, to the plant as it stands in the last edition of *Ray's Synopsis* by *Dillenius*. This *Flora* contains nearly a thousand plants, the Mosses and Fungi not being introduced. Such as are not found in *Sweden*, are distinguished by the *Italic* type, and of these there are nearly three hundred. A list of upwards of an hundred, which the author could not investigate, concludes the whole.

56. HERBARIUM AMBOINENSE. O. Stickman. 1754.

The *Herbarium Amboinense* is one of the greatest and most magnificent botanic treasures the world ever saw; and which we owe to the singular zeal and

and industry of RUMPHIUS, who lived upwards of 40 years in *Ambaina*, and was consul there under the *Dutch East India* company. He sweetened the leisure hours of his life by an uncommon and successful application to the study of natural history, which he pursued in all its branches, but particularly in botany. He had the misfortune to lose his family by the fatal earthquake of 1674; and some years after, having collected his materials for this work, and meditated his return to *Europe*, suffered the loss of his sight from a cataract, in which state he lived 20 years, and died in 1706.

This work comprehends the plants of *Ambaina*, *Malacca*, *Banda*, and the neighbouring islands; and, allowing for the time when it was written, contains excellent descriptions of the several vegetables of the *East Indies*, with a copious account of their uses; and though inferior to the *Hortus Malabaricus* as to the engravings, excels it in the history of the subjects. There are nearly one thousand vegetables described in this work, of which a great number were entirely new to the *European* botanists: of this number upwards of seven hundred are engraved.

The manuscript was 30 years in the possession of the *Dutch East India* company, and was rescued from oblivion by the interest and extraordinary zeal of the editor, Professor *Burman*, of *Amsterdam*; who, with great industry and skill, has also extricated the synonyms as far as possible, and subjoined them to each description. He began this publication

publication in 1741, and finished it in 1750, in seven volumes folio, except a small supplement, which was not published until 1757. In 1769, the editor rendered his work still more useful, by the publication of an alphabetical *index* to these volumes, with the *Linnean* synonyms; together with a like one adapted to the *Hortus Malabaricus*.

The pupils of the *Linnean* school much regretted, that the *Herbarium Amboinense* had not been completed before the publication of LINNÆUS'S *Species Plantarum*, that the synonyms might have been introduced. To remedy this defect was the intention of Mr. *Stickman*'s paper, in which the subjects are arranged in the order of the original work, with the *Linnean* name annexed to each; and afterwards, as many as could be extricated, are thrown into a *Flora*, according to the Sexual system.

It is to our neighbours the *Dutch* that the botanists are obliged for two of the most valuable performances that are yet extant in the history of foreign vegetables: this of *Rumphius*, and the *Hortus Malabaricus* of *Rheede*. But we hope that it will not be long before they will be more indebted to an illustrious *Englishman*, who, in pursuit of the same object, has encountered the perils of a circuit round this globe, for a work, which, from his taste, his liberality, and zeal for the promotion of science, may be expected to surpass those above-mentioned, as well in extent, as in grandeur, and elegance of execution.

57. CERVUS TARANDUS. G. F. Hoffberg. 1754.

In this tract we have a complete history of the *Rein-deer*, (*Cervus Tarandus*, Syft. Nat. p. 93.) an animal which almost solely constitutes the riches, not only of the *Laplander*, but of the other arctic inhabitants of the globe. In *Lapland* more particularly, the whole *res pecuaria* respects this animal, as it is in that country in a more especial manner domesticated. In summer the *Rein-deer* feed on various herbs, but reject a considerable number that are eaten by others. Of the particular species thus refused, the reader is presented with a catalogue, from the experiments of a curious observer. In winter, they are solely sustained by the *Rein-deer* liverwort, (*Lichen Rangiferinus*) or *Coralline Moss*, with which the alps of the north are covered. The *Rein-deer* are obnoxious to many diseases, which are all here distinctly described, and particularly those arising from the *Gad-fly*, called after its name, (*Oestrus Tarandi*, Syft. Nat. 969.) which deposits its eggs on the back of these animals, and in consequence of which immense numbers of the *Deer* perish yearly. See also *Flor. Lappon.* p. 360.

58. OVIS. J. Palmerus. 1754.

This dissertation contains the natural history of the *Sheep*, on the same plan as that of the foregoing paper, and abounds with many curious observations. The genus, species, and varieties are described, and many physiological observations
T given.

given. A list of those plants which the sheep does not eat, amounting, from the experiments of the *Pan Suecus*, to upwards of 140 species; some pointed out that are particularly grateful, of which number are the *Sheep's Fescue Grass*, (*Festuca Ovina*, Sp. Pl. p. 108.) the *Thlaspi Bursa Pastoris*, or Shepherd's Purse; and an enumeration of such as are highly noxious and poisonous to this animal; such are, Corn Horsetail, (*Equisetum Arvense*;) Spearwort, (*Ranunculus Flammula*;) Lancashire Asphodel, (*Antibericum Offifragum*;) Mouse-ear Scorpion-grass, (*Myosotis Scorpioides* β;) Wood Anemony, (*Anemone Nemorosa*;) Dog's Mercury, (*Mercurialis Perennis*.)

In treating on the diseases of sheep, the author enquires particularly into the *Dropsy*, or Rot, occasioned by worms in the liver, (*Fasciola Hepatica*, Syst. p. 1077.) which he thinks are swallowed by the animal in marsh water; and proposes salt as a preventive of their effects. [See the pathology of this disease by Dr. Nicholls, in the *Phil. Trans.* vol. xlix. p. 247. We can only add, that this paper cannot be less acceptable to naturalists, and lovers of rural economy in *England*, than the foregoing to an intelligent *Laplander*.]

59. MUS PORCELLUS. J. J. Nauman. 1754.

A zoological tract relating to the animal usually with us called *Guinea Pig*, the *Indian Rabbet* of the old authors, and the *Cavia* of the *Brasilians*; which LINNÆUS ranks under the *Murine* genus, by the name of *Mus Porcellus*, Syst. p. 79.

The writer treats largely on the manners and whole economy of this little restless quadruped: his observations are evidently the result of long acquaintance and attention. He says they are delicate food.

60. HORTICULTURA ACADEMICA. J. G. Wollratb.
1754.

This paper is intimately connected with N^o 54, the *Stationes Plantarum*. It exhibits a compendious system of the principles of gardening, particularly as applicable to botanical or academic gardens. In the beginning it is laid down as an axiom, "that the whole depends on a perfect knowledge of the climate of each plant, and the soil in which it flourishes in its own climate." As a striking instance of the necessity of paying regard to proper soil, and to induce curious people who transmit seeds and plants to *Europe*, to be more accurate in this particular, the writer mentions that of the *Ricatia Ægyptiaca*, (Spec. Pl. p. 912.) which no management could bring to flower and fruit, until LINNÆUS suggested mixing the *Argilla Nilotica*, the clay of the *Nile*, with the earth in the pot, and which very soon fully succeeded.

The *Linnean* terms applicable to the several kinds of gardens are defined, the heat of the different climates ascertained by *Celsus's* thermometer, and the various soils and situations proper to each enumerated.

61. CHINENSIA LAGERSTROMIANA. J. L. Odbelius.

1754.

At the time that LINNÆUS's great patron, Count *Tessin*, was chancellor to the King, and president of the Royal Academy of Sciences, he obtained, by the concurrence also of M. *Lagerstrom*, then counsellor of the chamber of commerce, and director of the *Swedish East India* company, an order, that each ship should be provided, at the expence of the Company, with a naturalist wholly devoted to his proper pursuits. To this institution we owe the discoveries made by *Ternstrom*, *Toren*, and *Osbeck*; and in consequence M. *Lagerstrom*, who was himself a man of letters, and a friend to science, procured, at his own expence, a great number of natural curiosities from *China* and the *East Indies*, which he presented to the museum of the university at *Upsal*. Among these particularly was a collection of the medicinal plants preserved in the apothecaries shops in *China*; also a *Chinese* herbal, in 36 volumes in 8vo, of which two consist entirely of figures.

The tract before us is a scientific description of more than 50 subjects of natural history, chiefly birds and fishes, collected from *China* by M. *Lagerstrom*. It is still of value, as being referred to from the System of our author.

62. CENTURIA PLANTARUM. A. D. *Fussenius*. 1755.63. CENTURIA II. PLANTARUM. E. *Torner*. 1756.

These tracts contain the descriptions of very rare, or heretofore undescribed plants, sent to

LINNÆUS

LINNÆUS from various parts of the world. Those described in the second century were transmitted by Segnier from *Verona*; by Sauvages from *Montpelier*; by Dr. Burman, who had received his from the *Cape of Good Hope*; and some by Mr. Miller of *Chelfea*. The time elapsed since the publication of these papers hath not lessened the usefulness of them, since they are closely connected with the *Species Plantarum*, are referred to in that work, and remain as so many illustrations of the system of LINNÆUS.

64. SOMNUS PLANTARUM. P. Bremer. 1755.

The subject of this paper, at the time of its publication, excited the attention of the curious throughout *Europe*. That nocturnal change to which certain plants are liable, and which is here analogically called *Sleep*, is more particularly manifested in those vegetables that are furnished with pinnated leaves, and of these the *Diadelphous* class affords the greater number. The change consists in the different position which the *folioles*, or small leaves, assume in the *night-time*, from that which they exhibit by *day*. Slight notices of this faculty are met with in the antients; in this paper the observations have been extended so far, as to take in upwards of 40 species, which are here enumerated, and divided into ten classes, according to the differences observable in the position of the leaves, during this sleeping state. The late Dr. Hill, by a well-instituted set of experiments, fully confirmed the idea, that this change

was owing to the absence of light. His experiments were made with the *Abrus Precatorius*, or scarlet *Indian Pea*, in which plant this change had been observed by *Prosper Alpinus*, and in which it is remarkable.

[The novelty of this paper induced the author of this volume, soon after its publication, to give the substance of it an *English* dress, and it was published in the *Gentleman's Magazine* for the year 1757, p. 315; to which the *English* reader, who wishes for further information, is referred.]

65. FUNGUS MELITENSIS. J. Pfeiffer. 1755.

This plant, notwithstanding the name it bears, is very far removed from the *Fungus* tribe, since it produces perfectly distinct flowers, and belongs to the *Monandria* order of the *Monoecious* class, and is called by LINNÆUS, *Cynomorium Coccineum*, Sp. Pl. 1375. The *Maltese Fungus* is a parasitical plant, singular in its form, which is little more than that of a simple stalk, about a finger's thickness, and six or seven inches long, and in its state of fructification, the whole plant may be considered as an *Amentum*, or Catkin. It is found on the coast of *Barbary*, in *Sicily*, and sparingly in *Malta*, springing from the roots of trees and shrubs, as does the *Asarum Hypocistis*, with which it also agrees in its sensible qualities and effects, and is much esteemed, and used in the countries above mentioned as an astringent medicine. The writer of this paper gives us, from the *Acta Bononiensia*, a detail of experiments made with this and several other

other subjects of the same class, to determine their comparative astringent and antiseptic powers on the human blood; from the result of which, he tells us, that the author was led to consider this *simple* as one of the safest and most powerful astringents.

66. METAMORPHOSIS PLANTARUM. N. E. Dahlberg.

1755.

The subject of this paper will scarcely admit of an abridgment, agreeable to our contracted plan. In order the more clearly to understand what the author calls the *Metamorphosis Plantarum*, he delivers, in a brief way, the *Linnean* doctrine of the physiology of plants; which supposes, that the *flower* is no other than the expansion or evolution of the trunk or stem, in the following arrangement: namely, that the *Cortex*, or outer Bark, is ultimately spent in forming the *Perianthium*, or Cup; the *Liber*, or inner Bark, in forming the *Corolla* or Petal; the *Lignum*, or woody part, in forming the *Stamina* or Chives; and the *Medulla*, or pithy part, in forming the *Pistillum*, or Pointal. Hence, whatsoever causes can disturb the usual, natural, and regular expansion and evolution of these parts, may be supposed to occasion great variety, and changes in the appearance of plants; and that such effects are brought about by change of climate, different soil, situation, air, culture, and perhaps various other yet unknown causes, is certain. To these sources must be traced the varieties we observe in the leaves, flowers, and roots, whether permanent, as is the case in some instances, or not. This

doctrine is here illustrated and confirmed by numerous examples; and the young and inexperienced botanist is guarded against the delusion, frequently occasioned by the operation of these causes; which are very extensive in the vegetable creation.

67. CALENDARIUM FLORÆ. A. M. Berger. 1756.

The *Calendar* of Flora is intended to exhibit the progress of the seasons, as they are manifested by the times of the flowering of vegetables; which in each species appears to be determined from some fixed law of nature; and from the due observance of which, after a sufficient course of experiments had been made, the author thinks, that the sowing of grain, and many other branches of rural economy, dependent on the seasons, might, in every country, be better regulated, than by the rules in common use. The tables in this tract were formed from observations made on the common plants of Sweden, in the Upsal garden, in 1755. This affair is also connected with the return and departure of migrating birds, and furnishes many curious and useful hints; but we do not enlarge, as this *thesis* was translated, and published with an *English Calendar of Flora*, by the late Mr. Stillingfleet, to which we refer our readers for more ample satisfaction. See also the *Vernatio Arborum*, N° 46. of this collection, a paper strictly connected with the *Calendar of Flora*.

68. FLORA ALPINA. N. N. Amann. 1756.

The alps of *Europe* produce a set of vegetables very different from, and incapable of culture in, the lower situations. The author of this tract, who was a native of one of the provinces bordering on the *alps* of *Lapland*, with a laudable zeal for the improvement of his country, enquires what kinds of vegetables might be cultivated in those desert regions to the most advantage, where so few thrive, where shrubs scarcely ever attain even a moderate size, and where a tree will hardly grow erect.

To this end, he first enumerates all the alpine parts of *Europe*, and gives a list of 400 plants peculiar to those situations. He expresses a wish, that at the royal, or public expence, a garden might be planted in the *alps*, to determine with precision what exotic plants would bear introduction into *Lapland*; and concludes by pointing out some of the esculent and medicinal kinds, as also some that are applicable to dyeing, and other arts, which he thinks might be cultivated to advantage in that northern region.

69. FLORA PALÆSTINA. B. J. Strand. 1756.

Many commentators have employed themselves in determining the plants of the sacred writings, among whom none are thought to have been more successful than the late learned Professor *Olaus Celsius*, in his *Hierobotanicon*; who was not only well qualified by his skill in the learned languages, and particularly

particularly in the oriental, but was himself also an excellent botanist. He lamented, that by a singular fate, whilst the missionaries of the *Romish* church had, in various other parts of the world, been very instrumental in improving natural science, *Palæstine* had been totally neglected; hence he was doubly solicitous to recover the collection of his countryman *Hasselquist*, and much rejoiced that it was at last redeemed; as he hoped a view of the subjects would throw great light on his favourite pursuit of illustrating the *Phytology* of the scriptures. *Hasselquist* had particular instructions to attend to this point: how well he performed this function, is proved by the present *Flora*, which is chiefly drawn from his discoveries.

This catalogue is compiled in the same compendious method as the other *Floræ* of these volumes, after the *generical*, only the *trivial* name being cited. The author has also availed himself of other helps from those travellers, whose skill in this part of knowledge was indisputable: some plants he has introduced on the authority of *Rauwolf*, *Prosper Alpinus*, *Shaw*, *Pocock*, and *Gronovius*. The whole number amounts to six hundred species. Mr. *Strand* has applied *Celsius's* names to his list, wheresoever it was possible; but the curious will regret, that the learned author of the *Hierobotanicon* did not live to give the public another edition of his work, after such new materials had come to his hands.

70. FLORA MONSPELIENSIS. T. E. Nabhorst. 1756.

The happy climate, and variety of soil and situation of *Montpelier*, renders this *Flora* one of the most copious of any. The vicinity of some considerable mountains and forests, and the maritime situation of the place, conspire to favour the growth of the plants of northern *Europe*, and of northern *Africa*, many of which are common to the *East* also. This catalogue is compiled from the *Botanicon Monspeliense* of *Magnol*, 1688, and the *Methodus Foliorum* of *Sauvages*. The *Flora Monspeliaca* has since been greatly enriched by the publications of *Gouan*.

71. FUNDAMENTA VALETUDINIS. P. Engstrom. 1756.

The author of this thesis derives the foundation of firm health and vigour of constitution from two sources: 1st, Good stamina transmitted by parents. 2dly, Care taken in the education, from the birth to the perfect state of adolescence. From the first, he thinks, that strength in the *nervous* system; and from the second, that strength in the *vascular* system, must be derived. In considering his first position, he has, in a concise manner, thrown together a variety of arguments, which he endeavours to confirm by the most respectable authorities, to prove that various disorders are transmissible to the offspring; also, that (independent of the specific disorders thus transmitted from the parent) others arise in children from enervated and debauched progenitors. To the first

first class he refers *Mania*, Epilepsy, Gout, Stone, and some others; to the latter, particularly the Rickets. In considering his second position, he prescribes the appropriate regimen to the mother during pregnancy, and for the nurse, whom he would always suppose to be the mother: and finally, concludes with some forcible persuasives to young men, not to defeat these desirable ends, by a course of intemperance.

72. SPECIFICA CANADENSIIUM. J. Von Coelln.
1756.

In the first chapter of this tract, the writer, after presenting us with a view of the progress of medical science through the several schools and sects of physicians, and condemning that *sarrago* of compound medicines, with which the practice of physic hath been so long burthened, considers the return to a more simple mode of prescribing as intimately connected with its improvement. This leads him to his subject, which is intended to exhibit and recommend to the notice of physicians, a number of simples from the vegetable kingdom, used by the natives of *North America*, in the cure of their diseases, some of which may be worth the notice of *European* physicians. These may be considered as constituting the *Materia Medica* of the *Indians*, among whom, as with other barbarous nations, all that can be called physic depends entirely on the empirical application of simples; nor can it be doubted, that long experience hath confirmed the efficacy of many to them.

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This catalogue is chiefly compiled from Mr. *Bartram's* appendix, *Colden's* papers in the *Upsal Aets*, and from the communications of *Peter Kalm*. It is not within our plan to detail the subjects of this paper. Among those mentioned by *Bartram*, we have the exact method of exhibiting the *Lobelia Siphylitica*, Sp. Plant. 1320, the *Indian* specific for the venereal disease, as delivered to Sir *William Johnson*, who purchased it of the *Indians* at a great price: this is much more largely treated of by *Kalm*. The virtues of many of these plants are confirmed by *Colden*. The *Spigelia Anthelmintica*, or Indian Pink; the *Phytolacca Americana*, Poke-weed; *Polygala Senega*; are all considered, and the *Geum Rivale*, or Mountain Avens, which is used instead of *Peruvian Bark*, and that with great confidence, in *North America*. The catalogue contains near 40 plants, and the author finishes by proposing a certain number of these, which appear to be most worthy of regard, to be cultivated in *Europe* for medicinal purposes; such are the

- Aralia Nudicaulis*; naked bastard Angelica.
- Collinsonia Canadensis*; called Horse-weed.
- Lobelia Siphylitica*; blue Cardinal Flower.
- Rumex Britannica*; *Virginian Water-dock*.
- Polygala Senega*; Rattle-snake Root.
- Aëtea Racemosa*; capsular Herb Christopher.
- Phytolacca Americana*; Poke-weed.
- Geum Rivale*; Mountain Avens.

73. ACETARIA. *H. Von der Burg.* 1756.

This writer, after having pointed out the advantages and disadvantages of eating crude vegetables, shewing to what constitutions such food is adapted, and having treated largely on the qualities of *Oil* and *Vinegar*, gives a catalogue, and describes the sensible qualities and powers of the different vegetables eaten in the various parts of *Europe* as *Sallads*. Eighteen different sorts are here enumerated; most of which are superseded among us by *Lettuce*, *Endive*, *Cressés*, and *Celleri*, the latter of which our author thinks particularly hurtful to such as labour under nervous disorders.

74. PHALÆNA BOMBYX. *J. Lyman.* 1756.

The history of the Silk-worm, (*Phalæna Mori*, *Syst. Nat.* p. 817.) its culture, and some account of the several species of *Mulberry* on which the insect feeds: of these the *white* is most acceptable, then the *red*, and *black Mulberry*. The writer thinks it probable that *silk* was first wrought by the *Chinese*; from whom the art might pass to the *Persians*. The Emperor *Justinian* attempted to introduce this worm into *Italy*, but it did not then succeed; neither was the true culture of it brought to perfection, until about the year 1130, in *Sicily*, from whence it spread into other parts of *Europe*.

The author mentions a species of *Bombyx*, (*Phalæna Atlas*, *Syst. Nat.* p. 808.) the cocoons of which are abundantly larger than those of the *Silk-worm*, and the silk much stronger; but it is to be regretted that they are difficult to wind, and are therefore

therefore commonly spun. We fear that M. *Lyman* is rather sanguine in thinking that the culture of the *Silk-worm* may succeed in so northern a climate as *Sweden*.

75. MIGRATIONES AVIUM. C. D. *Ecmark*. 1757.

This paper is confessedly one of the most complete that has been published on this curious subject, which is yet involved in considerable obscurity; the *cause* of these migrations, with respect to several birds, and the places of their resort, being yet unknown. With respect to the greater number, it cannot be doubted but that the facility of finding their appropriate food in distant countries, in the different seasons, and their security during incubation, have the principal share in this part of their economy.

Mr. *Ecmark* observes, that the greater number of migrating birds belong to the *flat-billed* order (*Anseres*), particularly to the Goose and Merganser genera; and to the Waders, (*Grallæ*): the former mostly breed in the extreme north, where, from the relation of LINNÆUS, their number almost darkens the air, and they are driven southward by the freezing of the lakes and rivers. Numbers also of the small-billed birds (*Passeres*), especially those with *slender bills*, are of the migrating class. The *insectivorous* retire southwards when our winter advances, as *others* in that season visit us for the sake of berries.

It is no small merit in Mr. *Ecmark*, that in this paper he brings together, in one view, more completely

pletely than any other writer had done, all the known species of migrating birds, whether exotic, or indigenous to *Sweden*. He gives a list of all such as are mentioned in the writings of *Catesby*, *Klein*, and *Hasselquist*; but the most considerable part of his tract is employed in a methodical enumeration of the indigenous birds of *Sweden*, under each of which he mentions, as fully as is yet possible, the particular times of their several migrations, the places whither they resort, their food, &c. and intersperses many other remarks, equally curious and satisfactory to those who wish for information in this part of natural history.

AMCENITATES ACADEMICÆ. VOL. V.

1760. pp. 483.

76. MORBI EXPEDITIONIS CLASSICÆ, 1756.

P. Bierchen. 1757.

The author of this tract was physician to the fleet of observation, which was fitted out in the beginning of the last war between *England* and *France*, by the *Swedes*, to act in conjunction with the *Danes*, in the north sea. The *Swedish* squadron consisted of eight ships of the line, besides frigates. When *M. Bierchen* took his appointment in *August*, he found not fewer than 1900 men on the sick list; and that the principal diseases were *Fluxes*, *Fevers*, and the *Scurvy*. The first were attended with great pain in the bowels, extreme weakness, fever, and a very weak pulse. The *Fevers* were of that kind which has been called

called the *Upsal Fever*, from its having been remarkably epidemical in that city and neighbourhood. This disease was evidently of that class which is called *putrid*, and was much more acute in summer than in autumn. It was attended with frequent and obstinate *hæmorrhages* from the nose, early in the disease; a quiet kind of *delirium*; *trembling tongue*; *twitching tendons*; *deafness*; *petechiæ*; and *vibices* on the skin. As the heat declined, *hæmorrhages* were not so much observed; the disorder attacked with *pain* and *lassitude* of body, *vertigo* and *pain* in the head, *cough* and *oppression* of the breast; and was afterwards attended with *cardialgia*, *nausea*, *vomiting*, *turbid*, and sometimes in the decline, *bloody urine*. Also great *prostration* of strength, *weak pulse*, and *sub-sultus tendinum*, were symptoms of this fever; and many were seized in the beginning with violent *fluxes*. The *Scurvy* seems to have been attended with no other than the usual symptoms.

Our author appears to have been very solicitous in his endeavours to find out the cause of the extreme prevalence of this disease in the fleet. In the *Scurvy*, besides the use of salted meats, he attributes much to the want of sufficient exercise on board the ships; and confirms the observations of some other writers, that the disease, independent of regimen or diet, decreased when the fleet was out at sea, and consequently the ships more agitated by wind and waves, and the men more employed; and that it augmented when they were in a state of inaction in port. He condemns the use

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of fat and lard, as difficult of coction, and favourable to the disease. In the cure, he recommends acids; and says, he used principally the *vitriolic*: but above all he celebrates the praises of *sour-kroot*; for the efficacy of which he also cites the authority and experience of Sir *John Pringle*.

He considers the *Fevers* as arising from impeded perspiration, co-operating with the effects of cold, moist, and foul air; and in *this expedition*, he thinks, the insufficiency of proper cloathing during the *watches* might not unfrequently be found a predisposing cause. He is of opinion that the disease was contagious; and says, many were cured by the early exhibition of *emetics*. In the general method of cure, the practice laid down by our later writers in *England* was successfully pursued.

The *Fluxes* and *Dysenteric* disorders he ascribes particularly to the prevalence of *saline* and *putrid* acrimony in the food of seamen; aided by foul air, and want of exercise, and propagated at length by contagion too.

Our author concludes, by suggesting that there are two causes, of a general and permanent nature, which predispose to these diseases in all naval expeditions. These are, *impure air*, and a constant depression of spirits in seamen, not hitherto sufficiently attended to, and inducing a degree of real *Nostalgia*. He seems to be sufficiently aware of the importance of correcting the first, and recommends strongly the use of *ventilators*; to the other it is not easy to apply a remedy. He informs us, that both *Swedes* and *Swiss* find the greatest relief,

relief, in the *Maladie du paix*, next to their return home, from strong exercise. I however he hints his wishes, that the pay of the men was advanced, as one of the best means of inspiring them with cheerfulness and hilarity, necessary to counterbalance this evil, at least in some degree.

To conclude, the subject of this paper has been so well treated by several later judicious writers amongst us, that the *English* physician cannot expect to meet with much new matter in this dissertation; but it is nevertheless very worthy the regard of all who wish to make themselves acquainted with the diseases of the navy.

77. FEBRIS UPSALIENSIS. A. Bostrom. 1757.

The fever here described, which had been remarkably epidemical in divers parts of *Sweden*, but particularly at *Upsal*, for several years before this time, and which had by many been supposed to be a new distemper, Dr. *Bostrom* considers as of the *Remittent* class, and common in all other parts of *Europe*. He has determined its type to be that of the *Hemiritæa* of LINNÆUS, (see *Gen. Morb.* N° 23.) or the *Semiteritian* of authors. In some years indeed, he observes, that it seemed to have changed its form, was attended with *Petechiæ*, and became contagious, under which appearance it was named *Febris Petechizans*, and *Febris Nervosa*, when attended particularly with *delirium* and spasms. In its milder state, especially in the spring, it assumed a regular *quotidian*, or *continued tertian* type.

In seeking the causes of the frequency of this fever, in *Upsal* particularly, our author accedes to that opinion which attributes *intermitting* and *exacerbating* fevers to the effects of *moist* and *foul* air, and thinks, from the situation of the city of *Upsal*, the closeness of the streets, and especially from the stagnating canals and waters, that its prevalence in that city may fairly be referred to this cause. To confirm his opinion, he cites two remarkable instances of cities rendered free from these fevers, by leading off, and drying up, stagnant and putrid waters.

In the *Prognostics*, he says, a stiffness of the neck was not uncommon, and that it usually betokened a long continuance of the disease; and frequently ended in convulsions, or other dangerous affections of the nervous system.

The cure of this fever was usually begun by giving gentle *emetics*, and repeating them for a few days occasionally; without which it was observed, that the *bark*, and other remedies, failed to have their proper effect. Gentle *paregorics* and saline medicines were interposed, and the following preparation of the bark exhibited:— One ounce was infused in five ounces of red wine for a few hours, the residuum boiled in water to eight ounces, and three ounces of syrup of oranges mixed with this tincture and decoction. Of this a dose was given every two hours. Dr. *Bostrom* entirely forbids bleeding, having commonly found it hurtful:

78. FLORA DANICA. G. T. Holm. 1757.

This *Linnean* catalogue of the plants of *Denmark*, is formed principally from the *Viridarium Danicum* of P. Kylling, published in 1688, which comprehends eleven hundred species. A few are introduced into this list from *Burser's Herbarium*, and some from the author's own observations.

Dr. *Holm* was made Professor of *Economy* at *Copenhagen*, and died much regretted in 1759. The plants of *Denmark* are nearly the same with those of *England*. [In that splendid addition to botanic science, which his *Danish* majesty has made by his patronage of the *Flora Danica*, begun in 1762, of which 840 plates are delivered, nearly four fifths are *British*.]

79. PANIS DIÆTETICUS. J. Suenßon. 1757.

The author begins his dissertation by enumerating the several sorts of grain used for *Bread*, adding briefly their general qualities, and the estimation in which they were held by the antients. He then specifies the various kinds of bread, whether leavened, unleavened, or fermented; considers it as it is the general food of man; the nature of it as a nutriment, and the different tendencies to acescency in the several kinds; condemning the too liberal use of it by the studious, persons of weak habits, and such as are troubled with flatulency—descants upon every part of the process of making it;—treats on mill-stones, and reproaches strongly such as are formed of sand-stone;

quoting instances of their pernicious effects ; says, those are best which are of a *talky* texture :—the effects of fermentation, kneading, and the different degrees of baking bread, biscuit, cakes, &c. ; —the qualities of the unfermented kinds ; and condemns in strong terms the use of hot new bread. He concludes by briefly reciting the qualities of such as is prepared from *Rice*, *Turkey-wheat*, *Millet*, and *Sago* ; and mentions the substitutes for bread in various parts of the world ; such are, the Cassava, (*Jatropha Manihot*, Spec. Pl. 1429 ;) Potatoes ; Yams ; Roots of the Sea Rush, (*Scirpus Maritimus*, Sp. Pl. 74 ;) those of Dropwort, (*Spiraea Filipendula*, Sp. Pl. 702 ;) of the Clowns-allheal, (*Stachys Palustris*, Sp. Pl. 811 ;) the *Lichen Islandicus*, Sp. Pl. 1611 ; the Bark of the Wild-pine, yet in use in *Dalekarlia* ; Chestnuts ; the Seeds of Spurrey, (*Spergula Arvensis*, Sp. Pl. 630 ;) and various others, for which see the *Plantæ Esculentæ*, in the third volume of this work, N^o 34.

80. NATURA PELAGI. J. H. Hager. 1757.

A general view of the contents of that vast expanse of element, the Ocean ; and a comparison between its inhabitants and those of the Earth : intended to excite the young and curious voyager to a more close and diligent investigation of this hitherto almost unknown, but fruitful field of science,

In the vegetable kingdom, Mr. Hager turns the reader's attention to the Sargazo, (*Fucus Natans*, Sp. Pl. 1628) which, swimming in a vegetating state,

state, covers the deep in some places for hundreds of leagues. See *Kalm* and *Osbeck*. The *Madrepores* and *Millepores*, which incrust as it were the bottom of the Ocean, and form banks, that at length rise into islands. The *Corallines*, and *Seafans*, &c. are spread over them, as Grass on the Earth.

But what words can express the myriads that belong to the *Vermes* class ! the *Nereides*, which illuminate the Ocean ; the *Medusæ*, or Blubbers, food for whales ; the *Asteriæ* ; the *Scyllæa Pelagica*, feeding amongst the *Fucus* ; the *Sea Pens* ; the *Holothuria Physalis*, Besanties ; the *Sepiæ* ; the *Argonautæ*, &c.

It were endless to attempt the *Fishes*. The various kinds of flying Fishes ; the Bonito ; the Albicore ; the Tunny ; the Pilot-fish, (*Gasterosteus Ductor*, Syst. 489 ;) the Sucking-fish, (*Echeneis Remora*, Syst. 446 ;) the splendid Dolphin ; the spiny *Ostracion*, &c. affording perpetual entertainment and instruction to the curious eye.

Among the *Amphibia*, the whole Turtle genus, sleeping on the surface of the wave ; the voracious Shark, those tygers of the ocean ; the Toad-fish ; the Fishing-frog of *America*, rioting in the pastures of *Sargazo*, and feeding on the *Scyllæa Pelagica* ; called, by the sailors, the Sea Hare.

Above, the feathered tribe, the Tropic-bird, (*Phaëton Æthereus*, Syst. 219,) soaring beyond the reach of the eye ; the Albatross, (*Diomedea Exulans*, Syst. 214 ;) the Man of War-bird, (*Pelecanus Aquilus*, Syst. 216 ;) the Shearwaters, (*Procel-*

larie,) skimming the surface; and lastly, the numerous genera of *Divers*, &c.

Of the *Mammalia*, we admire the enormous Whale; the voracious Grampus; and the unwieldy Porpoise; the armed Morse; and the basking Seal. Finally, *these*, which occur even to the most incurious eye, afford but a small sample of what this element offers to the contemplation of the more curious and inquisitive observer.

81. BUXBAUMIA. A. R. Martin. 1757.

The history, accompanied with figures, of a small plant of the *Cryptogamia* class, (*Buxbaumia Aphylla*, Sp. Plant. 1570,) singular in being destitute of leaves: it was first discovered near *Asfracan*, by Mr. *Buxbaum*, professor of botany, and member of the royal academy at *Petersburgh*; since that time, in divers other parts of *Europe*; and was named after the discoverer, by *Haller*, in consideration of his having enriched natural history with many new plants, from his expedition into the countries around the *Caspian* sea for that purpose.

82. EXANTHEMATA VIVA. J. C. Nyander. 1757.

The origin of contagious diseases has exercised the pens of many ingenious physicians, and various theories have been invented, all of which are briefly recited in the beginning of this disquisition. The author had been led by some singular circumstances to incline to that of *Kircher*, which ascribes them to *Animalcula*, and who has had many followers, especially in *France*.

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He next proceeds to shew the several analogies that subsist in the symptoms of contagious diseases; and as *Animalcula* have been demonstrated in the *Itch*, and, as he thinks, in the *Dysentery* too; so he tells us, they have been seen in the Measles, by *Langius*; in the Pestilence, by *Kircher*; in the Siphylis, by *Hauptman*; in Petechiæ, by *Sigler*; in the Small-pox, by *Lusitanus* and *Porcellus*; as also in the Serpigo, and other cutaneous affections. He then proceeds to adduce all that occurs in defence of this theory, from the consideration of facts arising in the following diseases; the *Itch*; *Dysentery*, *Hooping-cough*, *Small-pox*, *Measles*, *Plague*, and *Siphylis*.

In the *Itch*, the existence of the *Acarus Siro*, (Syst. p. 1024.) is acknowledged, and he thinks it not less certain, that a species of this genus exists as the cause of *Dysenteries*: to this opinion the author was led by a singular fact, that occurred to Dr. *Rolander*, during his residence in Professor LINNÆUS's house; he had been infested with the *Dysentery* for some time, and had been relieved twice by taking rhubarb, but the disease recurred, commonly, at the end of about eight days. He was the only one in the house thus affected; and was put by the Professor, upon examining his *egesta*, with a view to prove the truth of *Bartholinæ's* assertion, who relates that he had seen the alvine dejections full of the most minute insects in this disease. Dr. *Rolander's* observation on his own state confirmed the fact; and he afterwards discovered, that these *Animalcula* were conveyed
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into his body in water, received from a vessel made of juniper wood. This *Acarus* is described in the *System*, p. 1024. Our plan will not allow us to follow the author through the whole of his disquisition, it must suffice to say, that it is ingenious, and well worthy the attention of all those who wish to be acquainted with the doctrine which it favours.

83. TRANSMUTATIO FRUMENTORUM. *B. Hornberg.*
1757.

The purport of this dissertation is to combat, and abolish a long-established vulgar error, which nevertheless prevailed until the time of *Harvey*, among some men of considerable knowledge, and even now still subsists among the vulgar, in some parts of *Europe*; namely, that one kind of grain was convertible, by different soils, into an inferior, distinct, and more useless species: thus, that *Wheat*, in an impoverished soil, would change to *Rye*: this, to *Barley*: *Barley*, into *Darnel*: this, into *Brome-grass*: *Brome-grass*, into *Oats*. Some of the antients carried their belief farther, supposing, on the other hand, that in fertile lands, the reverse would take place. As these ideas were repugnant to truth, so they were in many cases unfriendly to improvement. This author, after having observed, that among the *Romans* the *Res Rustica* was held in such estimation, that even the men of quality themselves disdained not to cultivate agriculture, laments that in modern times it is too much neglected by the great; he therefore urges gentle-

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men to pursue the history and philosophy of vegetables, through the whole extent of them, as the foundation of practical improvements. With this view, he refers them to the many excellent papers thereon, contained in this collection: and from the physiology of plants, the consideration of the mechanism of them, and particularly that of the parts of fructification, he shews the futility of the opinion, which he had undertaken to confute, and particularly levels his arguments against that part of it which has gained the most belief, and remained longest in the minds of his countrymen and the peasants, that *Oats* are mutable into *Rye*.

No notice is taken in this dissertation of the *Secale Cornutum*, or Ergot, which, with other vitiated grain, has been supposed to occasion the *Necrosis Ustilaginea*, (vide *Sauvages's Nosolog.* vol. ii. p. 623.) and which lately engaged the attention of the learned in *England*. See *Phil. Transact.* vol. lv. p. 106—126, and vol. lii. p. 523—533.

84. *CULINA MUTATA.* M. G. *Osterman.*
1758.

In a former paper was exhibited a list of vegetables that are eaten in a *crude* state, as *salads*. The present is intended to shew the change which has taken place, since the time of the *apientis*, in the choice of vegetable aliments; by substituting, instead of what were then used, a number of more bland, agreeable, and nutritive plants.

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In this review of the alteration, which this part of the culinary system has undergone, the author, under each article, gives a comparative sketch of the qualities of each, and shews the superiority of the modern substitute: to mention some of the most material;

The *Acorns* and *Nuts* of the primitive days have given way to all the variety of sweeter farinaceous seeds and roots.

To the *Malvaceous* tribe of plants, so much used by the *Greeks* and *Romans*, hath succeeded the more grateful *Spinach*. And to the *Blite*, the *Garden Orach*.

The rough *Borage* is supplanted by the acescent *Sorrel*; and *Asparagus* has banished a number of roots, recorded by the *Roman* writers under the name of *Bulbs*, though at this day it is not easy to determine the several species.

Our author, however, thinks that the *Parsnip* has undeservedly usurped the place of the *Skirret*.

The *Bean* of the antients, improperly so called, being the roots as well as other parts of the *Nymphaea Nelumbo*, Sp. Pl. 730, or *Indian Water Lilly*, is superseded by the *Kidney-bean*.

The *Garden Rocket*, (*Brassica Eruca*, Sp. Pl. 932.) eaten with, and as an antidote against, the chilling *Lettuce*, is banished by the more agreeable *Cress*, and *Farragon*. The *Apium* by the meliorated *Celery*, the *Pompion*, and others of the *Cucurbitaceous* tribe, by the *Melon*; and the *Sumach Berries* by the fragrant *Nutmeg*.

The *Silphium*, or *Succus Cyrenais*, which the *Romans* purchased from *Persia* and *India*, at a great price,

price, and is thought by some to have been the *Asa fatida* of the present time, is no longer used in preference to the *Alliaceous* tribe.

To turn from the vegetable to some of the animal substitutes, we may mention the *Carp* among *Fishes*, as having excluded a great number held in high estimation in antient *Rome*.

The change of *Oil* for *Butter*; of *Honey* for *Sugar*; of *Mulsa*, liquors made of wine, water, and honey, for the exquisite *Wines* of modern times; and that of the antient *Zylbus*, for the improved *Malt Liquors* of this day, are all recited; not to mention also the *Calida* of the *Roman Taverns*, analogous to our bewitching *Tea* and *Coffee*.

85. SPIGELIA ANTHELMIA. J. G. Colliander.

1758.

A botanical and medical history of the *Indian Pink*, or *Worm-grass*, which has been so much used, and so greatly celebrated, for expelling worms from the human body.

Dr. Colliander does more than barely treat of the plant, having enumerated the several kinds of worms infesting the human species; the *Ascaris Vermicularis*, and *Lucubriformis*, Syst. p. 1276, the *Embricus Terrestris*, γ. ib. and the *Tenia*, Syst. 1324. He then gives a distinct account of the symptoms that indicate their presence in the human body, and the diseases which they too frequently occasion: then follows a distinct catalogue of all the supposed *Anthelmintics* from the vegetable and mineral classes; and before he comes to the history of

of the plant in question, he recites the several simples which have been considered as *Specifics*: among these we may note particularly the *Fern*, mentioned by *Dioscorides* as anthelmintic, and lately published in *France*, as such, at the expence of the king.

The history of the *Spigelia*, with a figure annexed, is then delivered at large, nearly as it stands in *Browne's History of Jamaica*, and in the *Essays and Observations physical and literary*, by Dr. *Lining*, vol. i. p. 385.

The success of this remedy among the negroes and *Indians* introduced it into practice. Dr. *Browne* administered it in decoction; the *North American* physicians give the powder of the root; on which occasion we may observe, that subsequent observations have proved the *South American* and *North American Spigelia* to differ in *specie*: the former is figured in *Browne*, and the latter in the *Essays* above-mentioned, vol. iii. p. 154. See their botanical distinctions also, *Linn. Syst. Nat.* ed. xiii. p. 166.

86. MEDICAMENTA GRAVEOLENTIA. J. T. Fagrus.

1758.

It is a *postulatum* in the philosophy of LINNÆUS, that "the qualities of medicines are, in a general way, to be determined by their effect on the organs of taste and smelling." And further, that the "*Sapida*, or those which more sensibly strike the taste than the smell, do principally operate on the vascular and vital system:" and that the "*Olida*, or those which more sensibly strike the organs of smelling, operate on the medullary or nervous system." The *Sapor Medicamentorum* of this collection,

tion, N° 30, may be considered as a comment on the first part of this general distribution of medicines, distinguished by the term *Sapida*; and the present *thesis* as an explanation of a large division of the *Olida*, here called *Graveolentia*, from their strong and ungrateful smell.

The combinations of *Sapids* and *Olids* are innumerable; but that simples, strictly of the latter kind, do, in a sudden and extraordinary manner, exert their influence on the nerves, is certain; though our author contents himself with the fact, without enquiring whether the functions of the nerves are performed by means of animal spirits, by vibration, the medium of electricity, or by any other way. And from the *Graveolentia*, which are the subject of his thesis, he justly observes, that we derive some of the most powerful remedies. Of these he gives a catalogue, dividing them into three classes: 1. SUBINSIPID. 2. ACRID. 3. BITTER: each of which is subdivided into two orders, as the subjects differ in degrees of strength. The *Subinsipid* contains chiefly the Narcotics: the *Acrid* several of the purging, and fetid roots; the fetid gums, and carminative seeds: the *Bitter* contains others of the purging roots and leaves; and some of the bitter herbs. Under each, the author specifies, in technical terms, very briefly, the quality, and the diseases to which it has been appropriated.

He then presents us with a concise, but very instructive theory, of the operation of this division of the *Olida*; leaving to the consideration of others, the *Suaveolentia*: after which, follows a general pathology

pathology of those diseases which are remedied by the *Graveolentia*.

In treating on the use of external applications, Dr. *Fagréus* appears to be dissatisfied with the common theory of repellents, which are usually drawn from the styptic class; and thinks, that the first class of *Graveolentia*, the *Narcotics*, which he supposes to induce a relaxation, or temporary palsy, in an inflamed part, more effectually promote a return of the stagnating and accumulating fluids into the circulation, than any styptics can possibly effect, and are therefore more justly entitled to that term.

87. ARBORETUM SUETICUM. D. D. *Pontin*. 1759.

88. FRUTETUM SUECICUM. D. M. *Virgander*. 1758.

The design of these papers nearly coincides with that of the *Flora Oeconomica*, (N° 17.) having for its object the culture of the native trees and shrubs of Sweden, and some of exotic origin, which time hath naturalized, amounting to 106 species. In these excellent papers, no botanical descriptions are given, the name only by which they stand in the *Linnean* system being introduced; the provinces in which they are most plentifully found; the soil in which they best thrive; their times of leafing, flowering, and ripening their fruit; their duration; the best methods of sowing or propagating each; and their uses as applicable to the arts, but particularly in rural economy, are concisely and distinctly treated of.

At the end of the *Arboretum* are subjoined some general rules, to secure the propagation and growth of

of trees : and at the conclusion of the *Frutetum* the author has pointed out the proper kinds of shrubs for all sorts of hedges, adapted to different situations and soils.

89. PANDORA INSECTORUM. E. O. Rydbeck. 1758.

Mr. Rydbeck pursues the plan of the *Hospita Insectorum*, N^o 43, the completion of which cannot but be subservient to the art of gardening, agriculture, and the economy of cattle, in a variety of instances ; and is even necessary to facilitate the enquiries of the entomologist.

The author, in his preliminary sections, presents his reader with a history of the *metamorphosis* of insects, from the worm or maggot, through that of the chrysalis, to the perfect state, when it comes out in its full beauty, and performs all the functions of its being.

The catalogue, as that of the *Hospita*, exhibits a list of the vegetables of Sweden, arranged in the sexual method, and under each is given the insect which it nourishes. It has this advantage beyond the former thesis, that the insects are better defined, by the more complete addition of the trivial names, taken from the enlarged edition of the *System of Nature*, which had been published in the interval of these two papers. It is accompanied with a plate, containing near 50 of the more rare species, with references to the numbers in the tenth edition of the *System*.

90. SENIUM SALOMONEUM. *J. Pilgren. 1759.*

A paraphrase and comment on *Solomon's* description of old age, which has so frequently employed the pen both of medical and theological critics. With the reader's leave, this may be called a physiological and pathological explanation of the text; not that the author has failed to intersperse suitable moral reflexions. *Solomon's* allusions are probably too obscure, at this distance of time, to admit of uncontroverted explanation. The present attempt must be allowed to be an ingenious one, and worthy of the regard of those who wish to turn their attention to this subject.

91. AUCTORES BOTANICI. *A. Loo. 1759.*

We are here presented with an alphabetical catalogue of botanic writers, amounting to upwards of 350, on the following plan:—After the name of the writer, follows the time of his birth; his rank or profession; the period in which he flourished, commonly taken from the date of his first publication, the title of which is given in brief; and lastly, the year of his death. The catalogue takes in some authors yet living.

Such as have been eminently conspicuous for their merit, are, in this list, denoted by an asterisk affixed to the name. After the alphabetic catalogue, other arrangements of the same authors take place; in one, particularly, they are arranged according to the countries of which they were natives. The catalogue concludes by pointing

out such capital writers as are indispensably necessary to such as would make any considerable progress in the knowledge and history of botany.

92. INSTRUCTIO PEREGRINATORIS. E. H. Nordblad, 1759.

After some pertinent instructions, to the young traveller for his conduct in foreign countries, and useful hints relating to those requisite qualifications, in which, it is to be regretted, too many who travel are deficient, we are presented with the complete method of keeping a journal, on the most extensive scale, pointing out whatsoever is worthy of observation. It is not easy to conceive a plan of instruction on this head more perfectly described; in which the traveller will not only find his memory much assisted, by having proper objects of inquiry suggested to him, whether in nature or art, but the method of arranging them also, greatly facilitated.

One part of his advice is of the utmost importance, without the due and regular observance of which, nothing will effectually be done. "*Nulla dies sine linea.*" He must, if he would excel, most strictly observe to enter and arrange the observations of each day, before the next arrives.

93. PLANTÆ TINCTORIÆ. E. Jorlin, 1759.

Intended to bring into one general view all the vegetable substances, whether indigenous or imported, used in the art of dyeing. The author determines the exact plant from which each is

produced, adding short observations on the colours they yield, and the methods of extracting them. In this *Materia Tinctoria* occur many of the indigenous plants of *England*, not commonly known to be possessed of any colouring quality; and though their use, at present, may be superseded by the facility of procuring better from abroad, yet these nevertheless remain fit objects of inquiry with the encouragers of arts. The catalogue consists of 100 articles, exclusive of a few from the animal kingdom. We subjoin the names of those *English* plants, under the several colours which they are said to yield.

YELLOWS.

Bark of Buck-thorn,	<i>Rhamnus catharticus.</i>
Berry-bearing	} <i>Frangula.</i>
Alder,	
Berberis,	<i>Berberis vulgaris.</i>
Plum-tree,	<i>Prunus domestica.</i>
Apple-tree,	<i>Pyrus Malus.</i>
Horn-beam,	<i>Carpinus Betulus.</i>
Root of Meadow Rue,	<i>Thalictrum flavum.</i>
Common Nettle,	<i>Urtica dioica.</i>
Herb, Saw-wort,	<i>Serratula tinctoria.</i>
Bushy Hawk-weed,	<i>Hieracium umbellatum.</i>
Hemp-agrimony,	<i>Bidens tripartita.</i>
Gale, or Dutch	} <i>Myrica Gale.</i>
Myrtle,	
Sweet Willow,	<i>Salix pentandra.</i>
Birch-tree,	<i>Betula alba.</i>
Hedge-nettle,	<i>Stachys sylvatica.</i>
Spotted-armsart,	<i>Polygonum Persicaria.</i>
	Herb,

Herb, Yellow Loose- strife,	}	<i>Lythymachia vulgaris.</i>
Devils-bit,		<i>Scabiosa Succisa.</i>
Kidney-vetch,		<i>Anthyllis Vulneraria.</i>
Common yellow Liverwort,	}	<i>Lichen parietinus.</i>
Flowers of St. John's Wort,		<i>Hypericum perforatum.</i>

REDS.

Roots of Ladies Bed- straw,	}	<i>Galium verum.</i>
Herb Wood- roof,		<i>Asperula tinctoria.</i>
Sorrel,		<i>Rumex Acetosa.</i>
Tormentil,		<i>Tormentilla erecta.</i>
Purple Cinque- foil,	}	<i>Comarum palustre.</i>

PURPLES.

Herb, or Tops of Wild- Marjoram,	}	<i>Origanum sylvestre.</i>
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BLUES.

Bark of the Ash,	<i>Fraxinus excelsior.</i>
Flowers of Larkspur,	<i>Delphinium Consolida.</i>
Bell-flower,	<i>Campanula rotundifolia.</i>
Berries of Black Heath,	<i>Empetrum nigrum.</i>

GREENS.

Herb of Ragwort,	<i>Senecio Jacobaea.</i>
Cow-weed,	<i>Chærophylum sylvestre.</i>
Panicle of Brome-grass,	<i>Bromus secalinus.</i>
Common Reed,	<i>Arundo phragmites.</i>

BLACKS.

Bark of Oak,
Water Horehound,

Quercus Robur.
Lycopus europæus.

94. ANIMALIA COMPOSITA. A. Back. 1759.

Under the term *Animalia Composita* are comprehended the two last orders of the class of *Vermes*, making the last links in the chain of animal nature; and thus connecting it with the vegetable kingdom. These (in opposition to those of the three foregoing orders of the same class, which live simple and separate from each other) are called *Compound Animals*, as being connected together by one common base or support, either in the form of irregular or rudely-branched stony masses, of a calcareous nature, as the *Lithophyta*, or Corals; or, as fixed to one common stalk more or less branched, as the *Zoophyta*, or Corallines, and some others.

In order to give a more perfect idea of the nature of these animals, the author holds forth the general analogy between animals and vegetables, principally to shew that the former are not, like the latter, endowed with that multiplicative power of propagating themselves without the particular energy and exertion of the generative function; whereas the *Animalia Composita* seem to unite these powers, since they not only appear to propagate by eggs, or *vivæ soboles*, but also by progressive extension and ramification.

The animals of the *LITHOPHYTA*, like the *Testacea*, fabricate their own base of calcareous matter,

matter, forming the whole mass into tubes, each ending on the surface, in pores or cells, according to their specific difference, where alone the animal seems to dwell, and extending these habitations progressively, in the manner of vegetables, leaving the base at length to perish.

The animals of the *Zoophyta*, containing the Corallines, &c. particularly the *fixed* ones, approach much nearer than the foregoing to vegetables, both in their texture and form in general, arising as if from a root, and forming a stem and branches, which are beset at the extremities and articulations with the animals, or *Polypes*, appearing by the help of glasses like so many flowers.

Since this tract was written, the subject has received much farther illustration from the discoveries of the late Mr. *Ellis*.

95. FLORA CAPENSIS. C. H. *Wannman*. 1759.

In the time of the *Romans* it was a trite proverb, that *Africa was the land of wonders*; and it still remains true, as in these days it affords, both in the animal and vegetable kingdoms, some of the most stupendous and singular productions of nature. From the first discovery of the *Cape of Good Hope*, from whence *Europe* has chiefly been furnished with the plants of *Africa*, their uncommon aspect, so very different from those of *Europe*, has attracted the notice, not only of naturalists, but of all mankind; and as the mildness of that climate allowed of their cultivation here, they soon became favourites in the *English* gardens.

Some of the first *Cape of Good Hope* plants that were brought to *Europe*, we owe to *J. Heurnius*, who sent them to his brother, a professor at *Leyden*; and they are figured in *Bodeus à Stapel's Theophrastus*, p. 333; among these were the Indian Reed, (*Canna Indica*), the *Hemantibus Coccineus*, *Stapelia*, the *Aletris Uvaria*, and a few others. But the first botanist who visited the *Cape* was *Paul Herman*; he collected 800 species, then unknown in *Europe*: after him *H. B. Oldenland*, a *Dane*, and *J. Hartog*, a *Dutchman*, both made collections of *African* plants, which at length falling into the hands of the present able professor of botany at *Amsterdam*, *Dr. John Burman*, he published engravings of *ten decads* of the more rare kinds. From these materials chiefly the present *Flora* is composed, according to the usual plan, with the *trivial* names only.

Among the plants of the *Cape*, there are 38 genera peculiar to that part of the world, several of which excel all others in the number of species, as well as in their uncommon and superb appearance. The vast number of species under the same genus, so frequently met with in that country, strongly favours the idea of the perpetual new origin of plants; and that many, which elsewhere are only *hybrid*, there propagate and become permanent. But *Caffraria*, beyond all other countries, abounds with extensive genera of plants: the succulent kinds, particularly, cover the sandy soil, where nothing but the fact could convince us that vegetation would in any degree succeed. Such are the

Fig-marygolds, (*Mesembryanthema*), Aloes, *Purs-lanes*, &c. Among the others, we are astonished with the variety of the *Heaths*, (*Ericæ*), *Gerania*, *Protææ*, and *Gnaphalia*.

Since the publication of M. *Wannman's* thesis, great discoveries in botany have been made in southern *Africa* by *Thunberg* and *Sparmann*, and by Mr. *Masson*; and we have reason to expect a complete account of the plants of that country from Dr. *Laurence Burman*, son of professor *J. Burman*, who has already given us a compendious list of them in his *Flora Indica*.

96. FLORA JAMAICENSIS. C. G. Sandmark. 1759.

The author begins his *Flora* with a general account of the geography of the island, and its produce; specifying particularly some of the most useful articles thence imported: as, *Guaiacum*, *Fustic*, *Ebony*, *Logwood*, *Brasiletto*, *Mabogany*, *Indigo*, *Sugar*, *Coffee*, *Cotton*, *Pimento*, and *Ginger*. He then subjoins an account of the two principal works, from which his catalogue is compiled; these are Sir *Hans Sloane's* History and Dr. *Browne's*. The former of these writers appears to have been the first naturalist who visited that island, and he brought back with him 800 species of plants. The latter is said to have made a collection amounting to 1200, which, after the publication of his History, he presented to LINNÆUS. As Dr. *Browne* followed the *Linnean* system, his book is referred to in this *Flora*.

97. PUGILLUS JAMAICENSIVM PLANTARVM. G. Elmgren. 1759.

A description of one hundred and thirty species of the *more rare* among the foregoing plants, made from Dr. Browne's collection, which was in the hands of professor LINNÆUS.

98. NOMENCLATURA PLANTARVM. B. Berzelius. 1759.

Contains the vernacular names of the *genera* of plants, particularly of *European* and *garden* kinds, in *Italian, French, English, Dutch, and German*, placed in columns, opposed to the *Latin* name. It would have been an acquisition to have had the plan of this paper extended much farther, so as to have included not only the name of the *genus*, but that by which each *species* is known in the several countries; a thing too much neglected by almost all writers of local catalogues, although highly necessary to render them more extensively useful. Nay farther, even the provincial names, if possible, should be collected, as they are frequently very different for the same plant. LINNÆUS, in his *Flora Suecica*, is almost the first and only one who has taken due notice of, and supplied this deficiency. There is extant on this subject the *Index Plantarum Polyglottus* of Mentzelius, published in 1682; but the writer of this *Nomenclator* found it insufficient to his purpose; neither indeed can the plan be completed, otherwise than by the united endeavours of botanists throughout the world.

99. AER HABITABILIS. J. V. Siesvert. 1759.

The comprehensive nature of the subject, and the concise manner in which the history of the air is treated in this dissertation, render it impossible to give a proper abstract in our confined plan. This element is here considered in all the various changes to which it is subject: its properties under the different and opposite alterations discussed; its effects on the earth in the various quarters of the globe; and its influence on the health and economy of life, and manners of the inhabitants.

1. With respect to its *heat and cold* in the different quarters of the earth: of these the general result is given according to the computation of the *Swedish* thermometer, or *Celsius's*, in which (0) is the point of congelation, and (100) that of boiling water; five degrees in this being equal to nine of *Fahrenheit's*.

2. Its *dryness and moisture*, and the general effects of those qualities pointed out. The torpid state of the inhabitants of hot countries during summer: heat in those countries defoliates trees, as cold does in temperate climes.

3. Its *gravity*, and the different degrees and effects of it considered.

4. The effects of the different *winds*, and their salutary and pernicious tendencies. That of *Calms* also. In the Isle of *St. Thomas* there is a dead calm for two months, during which the worst diseases prevail.

5. The effects of an hot atmosphere farther illustrated by the state of the *Indians*. Diseases thereby produced in more moderate climates.

6. Temperate

6. Temperate air, and its exhilarating qualities on the animal creation, &c.

7. *Moist air*, and the diseases thence arising.

8. *Air* impregnated with *exhalations* of various kinds; a common cause of fevers, dysenteries, head-ach, &c.

9. *Stagnant air*, in vaults, in subterraneous granaries, and mines.

10. *Effluvia* from burning substances: instances of their pernicious effects, largely treated of. *Mineral vapours*; those from wine, &c. Premature deaths of the inhabitants of a village in *Wermeland*, attributed to stagnant and putrid water.

11. The advantages to valetudinarians of changing the air, particularly to arthritics, hypochondriacs, and others. Finally, although the intelligent reader may not meet with much new matter in this tract, yet he will see facts so well illustrated by pertinent observations, that we may venture to pronounce this short history and philosophy of this element, a useful paper, and well worth attention.

100. SUS SCROFA. *J. Lindb.* 1759.

A complete natural history of the *Hog*, as it appears particularly in its cultured and tame state; in which the whole economy also of the animal, and its uses to mankind, are perhaps more completely treated of, than in any other publication, and which cannot fail to be acceptable and useful to those who make this animal an object of merchandize.

AMCENITATES

AMŒNITATES ACADEMICÆ. VOL. VI.

1764. pp. 486.

101. GENERATIO AMBIGENA. C. L. Ramstrom.

1759.

The author begins his subject with a concise view of the antient and modern theories relating to this obscure affair. He observes, that the antient doctrine of *equivocal* generation prevailed in general, until *Harvey* exploded it, and taught that every animal is generated *ex ovo*; and that his system may now be considered as including a double hypothesis: first, that taught by himself, which supposes the entire rudiments of the future *fœtus* to be present in the *ovum*, and only waiting for animation from the vivifying principle, or *aura genitalis masculina*; the other, that of the *seminal animalcule* entering into the *ovum*, according to the theory arising from *Lewenboeck's* microscopical discoveries. We have before observed that *LINNÆUS* very early forsook *Lewenboeck's* theory, in consequence of attending *Lieberkühn's* demonstrations. The argument of the present hypothesis tends to shew, that both sexes are equally efficient in this work; leaning however to the following opinion, "that the external form, as well as the specific energy, of the vital functions, are principally derived from the male parent." This is partly the opinion also of the very eminent Dr. *Haller*, *Phys.* § 786. Our intended brevity does not allow us to pursue our author through all his arguments

arguments in behalf of his hypothesis ; we must rest satisfied with observing, that after drawing a physiological analogy between vegetables and animals, he thinks it *evident* that in both, the *male* is most commonly conspicuous in the *external form* : and this he illustrates by several examples of *hybrid* species in both the vegetable and animal kingdom.

102. POLITIA NATURÆ. H. C. D. Wilcke. 1760.

Intended to display that perfect order and just subordination of all the several parts of nature, by which they are rendered mutually subservient to the conservation of each other, and of the whole ; and which, collectively considered, our author, not unaptly, has named *the Polite of Nature*.

This physico-theological design is pursued nearly on the same plan as that of the *Oeconomia Naturæ*, N^o 19, by exhibiting,

1. A general view of the *Fossil* kingdom, as constituting the surface of the globe, and as disposed into land and water, hills, mountains, vallies, &c.
2. That innumerable variety of *Vegetables*, with which the surface of the earth is clothed and adorned, as adapted to the different soils, climates, and elevations ; and again, as affording nutriment to animals of various kinds.
3. In the *Animal* kingdom, a general view of their relations to each other, and the proportion they bear in the scale through the several classes, from the *Vermes* up to the highest and most perfect ;

fect; in which are considered their specific uses in the general economy.

Our author has illustrated his subject, by adding numerous examples from all parts of the *Vegetable* and *Animal* kingdom, to shew how admirably the whole is ordained, to contribute to the generation, nutrition, and due proportion of each, in the grand scheme of nature and providence.

103. THESES MEDICÆ. J. C. D. Schreber. 1760.

In this dissertation, Dr. Schreber delivers a brief view of the *Linnean* doctrine, relating to the anatomy and physiology of plants, in which he endeavours to sustain the following theses:—That all plants consist of a *medullary* and *cortical* substance; in the former of which is manifested the life of the plant, and through which it is perpetuated, either by seeds or buds, which are considered as the ultimate extension of this part. The *cortical* part is considered as the organ of nutrition to the whole.

—That, as in a number of certain species of plants, which in artificial systems form a *genus*, we see a similar proportion and agreement of the parts of fructification, howsoever different the external form of the whole plant; and as we not unfrequently see *hybrid* plants produced, he therefore proposes it as a matter worthy of speculation, whether, originally, *all* the species have not been produced in the same way, by the various admixtures of the *farina*. From this power in the *medullary* part, of perpetuating itself, and modifying the whole

internal structure, the author also deduces the similar qualities which are commonly found in plants of the same genus, as manifested by the *taste* and *smell*.

104. FLORA BELGICA. *C. F. Rosenthal*. 1760.

A *Linnean Flora* of the indigenous plants of the *United Provinces*, compiled from the catalogues of *Commeline*, printed in 1709, and of Dr. *David de Gorter*, printed in 1745, at that time professor at *Harderwick*, and afterwards physician to the *Empress of Russia*. The author refers to the page for each plant in both these works. He premises a general account of the country, with respect to its divisions into provinces, the climate, the inhabitants, the commerce; enumerates their universities and gardens; then gives concise lists of the plants found in particular situations, in the canals, for instance, on the dykes, in the woods, osieries, &c.

The plants of *Holland*, as far as soil and situation admit, are nearly those of *England*; but as the country is destitute of mountains, rapid rivers, alps, and chalky soil, a great variety are necessarily excluded.

These works are superseded by an enlarged edition of Dr. *De Gorter's* book, under the title of this thesis, printed in 1767; and which contains upwards of 1050 species.

105. ANTHROPOMORPHA. *C. E. Hoppius*. 1760.

The history of the *Simia* genus, especially as it respects those species which so nearly approach the human

human form and feature, is yet involved in no small obscurity. After a general account of the manners of these animals, the reader is here presented with an history of four remarkable species.

1. *Simia Pygmæus*, the Wild Man of the Woods, described and figured by *Edwards*, t. 213. (*Simia Satyrus*, Syft. p. 34.)

2. *Simia Satyrus*, of *Tulpius*, which LINNÆUS considers as the same animal with the foregoing, differing only in having the abdomen more prominent, and less furnished with hair.

3. *Simia Lucifer*, or *Homo Caudatus* of *Bontius*, said to exist in *Java* and *Nicobar*, of which travellers have related strange stories. The author describes this animal on the authority and testimony of *Koping*, a *Swede*, who asserts that he had seen both male and female; nevertheless it may justly be suspected, that there is somewhat of fable, or much exaggeration, mixed with this relation. The reader may see more relating to this animal and *Koping's* book, in a letter from LINNÆUS himself to the author of "The Origin and Progress of Language," vol. i. ed. 2d, p. 260, note.

4. *Simia Troglodytes*, or Orang Outang of *Bontius*; the *Homo Nocturnus*, or *Troglodytes* of the Syft. Nat. p. 33. Concerning these the author takes great pains to prove that they are really children of darkness, and incapable, from the extreme dilatation of the pupil, of seeing in the day-time. [The length of the arms would incline one to rank this creature with the *Gibbon* of *M. Buffon*, or that of which an account, accompanied with a figure, was transmitted by Mr. *De Visne* from *Can-*

ten, and published in the *Phil. Trans.* vol. lix. p. 72. t. 3. See also *Lin. Mant. alter.* p. 521.] Figures of these several animals, taken from the respective authors, accompany this dissertation.

106. PLANTÆ AFRICANÆ RARIORES. J. Prinitz.
1760.

Of all the quarters of the globe, no one displays such luxury and variety in the production of plants as southern *Africa*; from whence the *European* gardens have derived their most superb and ornamental species. This catalogue contains the description of a century of the most rare, some entirely new, and others before imperfectly noticed. It was drawn up by the author from an inspection of the plants themselves, in a collection sent from *the Cape of Good Hope*; with a view of which Dr. *Laurence Burman* gratified LINNÆUS, when he paid him a visit in the summer of 1760. Extremely different as the plants of *the Cape* are from those of *Europe*, many of the latter nevertheless thrive well in that climate. The author has prefixed a list of 70 kinds, which occurred in looking over this collection. He concludes this paper with a list of *African* plants, as an *Appendix* to the *Flora Capensis*, N° 95, before published in this collection. It comprehends near 200 species, from *Oldenland's Herbarium*, made in 1695. Mr. *Prinitz's* catalogue is yet of use, as being referred to from our author's *Species Plantarum*.

107. MACELLUM OLITORUM. P. Jerlin. 1760.

Under this title our author includes the plants of the kitchen-garden; and we are here presented with

with a catalogue, amounting to 77 kinds, of culinary herbs, principally such as are found spontaneously growing, or are easily cultured. It is drawn up on the same plan with LINNÆUS's *Materia Medica*, specifying briefly the duration of each, whether annual, biennial, or perennial; the part of the plant in use; and the mode of dressing it: after these follows a brief indication of the taste or other sensible qualities, and their reputed effects on the human body.

The author divides the culinary herbs into three classes.

1. Roots: and these into fusiform, and tuberous.
2. Stalks: comprehending particularly the young and blanched shoots; as *Asparagus*: and the *disk* of the flower; such is the Artichoke.
3. Leaves: divided into *Olera*, or boiling herbs, sprouts, and greens; and *Accetaria*, or sallads, eaten crude.

Our author commends *Parsnips*, in preference to Turnips and Carrots, as being less flatulent, and more nutritive. He condemns the use of *Mushrooms*: says the *disk*, and the young stalks of the Cotton Thistle, (*Onopordon Acanthium*) may be eaten, and resemble Artichokes. It is here repeated, that *Cellery* is prejudicial to people subject to nervous disorders. The contents of this paper would enrich an *Economical Herbal*.

108. MELØE VESICATORIUS. C. A. Leneus. 1762.

A complete history of the *Meløe Vesicatorius*, Syst. p. 679, or the Blistering Fly or Beetle, an

insect of the *Coleopterous* order, with filiform antennæ, and distinguished from the other genera by the rounded thorax, and gibbous inflexed head. The species in common use is found all over *Europe*, more or less, on the *Privet*, the *Ash*, and the *Elder*; but there are also three others endued with the same vesicating acrimony, two of which are *European*, and the other common all over the *East*, and particularly in *China*, where it is used in the shops; and there are many reasons mentioned by our author to prove, that this last (the *Melœ Cichorii*, Syst. 680.) is the true *Cantharis* of *Dioscorides*.

After a copious natural history of the insect, our author gives the form of several vesicating plasters, and prescribes the places and mode of application. In his last chapter, which is professedly medical, he treats on the internal and external use of *Cantharides*, principally considering how far they are safe and useful as diuretics, when administered internally: under this head he introduces a case, which furnishes a caution against the use of them as *Aphrodisiacs*. After premising some general observations on the action and use of blisters, he concludes by enumerating all those diseases in which they are salutary, and those in which they are particularly contra-indicated. In *England*, where it is thought the use of blisters is better ascertained than in some other nations, the intelligent physician will not expect to meet with much new matter on this subject.

109. DIÆTA ACIDULARIS. *E. Vigelius. 1761.*

It is not surprizing, that in a country abounding with iron, chalybeate waters should be frequent. In fact, these *Acidulæ* are so in *Sweden*, and their efficacy has been known, and much extolled in that country, as our author observes, from the most antient times. He thinks the inhabitants of those northern climes were led to the frequent use of the *Acidulæ*, by long experience of the salutary effects of them as *diuretics* and *tonics*, in remedying the inconveniences arising from a long winter's diet of salted meats, which disposed the constitution to scorbutic, cachectic, and dropical disorders. The later physicians of *Sweden* have regulated the use, and confirmed the good effects of them: and Mr. *Vigelius*, in this dissertation, has, in a concise, elegant, and perspicuous manner, prescribed the regimen adapted to such as enter upon a course of these waters, digested under the six well-known heads of the *Non-naturals*.

110. POTUS COFFÆÆ. *H. Sparsebueh. 1761.*

A very circumstantial, botanical, and medical history of the Coffee-tree, and its fruit, (*Coffea Arabica*, Sp. Pl. p. 245.) The writer is one of the last of 20 authors who have written professedly on this shrub, all of whom he enumerates by name, with the date of their writings, from 1621 to *Kalm's* treatise in 1755.

Coffee, originally the produce of *Arabia Felix*, where the best is now most successfully cultivated, is called, by the *Egyptians*, *Bon*, and is first mentioned by the *Arabians* about the year 900. Our author says, it was brought into *Europe* about the year 1645, and that the first public coffee-house was set up at *Marseilles* in 1671. The shrub itself was introduced into the *European* gardens about the year 1710, by means of seeds procured from *Arabia*, by Governor *Van Hoorn* of *Batavia*, who also first cultivated it in *America*, at *Surinam*.

We are next presented with the classical, general, and specific character of this plant; to which succeeds a copious list of synonyms, and the description at large, as it stands in the *Hortus Cliffortianus*. The culture of the shrub; the preparation of the berry; the different times and modes of drinking this liquor, which custom hath established in the various nations; and the *succedanea* to this berry, are then discussed. Among the latter are mentioned *Pease*, *Beans*, *Beech-nuts*, *Almonds*, *Maiz*, *Wheat*, and the seeds of the *Sunflower*, (*Helianthus Annuus*). Vide *Gouan. Flor. Monsp.* p. 456. Of these he prefers *Almonds*, but he observes that they dispose to flatulency much more than *Coffee*.

In speaking of the qualities and virtues of *Coffee*, our author thinks it should rather be classed with medicines, than considered as a nutritive article in diet. He appears to be no friend to its frequent and indiscriminate use: he thinks it destroys rather than creates appetite: that it occasions
watchfulness;

watchfulness; and promotes *flatulence* and *indigestion*, instead of relieving them, as is generally believed: that it *debilitates the nerves*, and occasions *tremblings*. On this occasion he thinks it worth enquiry, whether it may not contribute to those sudden deaths which are frequent at *Stockholm* about the winter solstice, as they have been observed to happen to such as were inordinate drinkers of this liquor: that it is *antiapbrodisiac*, he says, is generally allowed; and he illustrates and confirms this quality by a pleasant tale from *Olearius's Travels*: that it *weakens the sight*; is noxious to *melancholic*, *hypochondriacal*, and *hysterical* people: that it promotes *hemorrhages* of all kinds; and that a free indulgence in the use of this liquor cannot be safe, except to the corpulent.

Considered as a medicine, from its heating quality it is forbidden in *fevers*. From its stimulating and drying quality, allowed by all physicians, is deduced its usefulness in *corpulency*, and in the *leucorrhæa*. It has been considered as an *antbelmintic*; but its ill effects on the tender habits of children, more than balance any good ones in that way. In *soporose affections*, in *phlegmatic* and *corpulent* habits, our author allows its use; and from its known effect in promoting hemorrhages, it must be considered as an *emmenagogue*. That *head-achs* are frequently relieved by Coffee, is confirmed by daily experience; and our author relates that LINNÆUS himself found it singularly useful in taking off a *cardialgia*, with which he was affected at the time he was physician to the fleet, in 1740; and which he attributed to the effluvia of the hospital,

pital, as it constantly succeeded his morning visits to the sick.

III. INEBRIANTIA. O. R. Alander. 1762.

Inebriants are almost universally derived from vegetables. They are defined by our author to be such things as affect the nerves in a particular and agreeable manner, and through them alter and disturb the functions of the mind. They are properly divided into *native* and *artificial*; the former chiefly in use among the oriental and other nations, the latter principally throughout *Europe*. Of *native Inebriants* the following are enumerated, and the mode of administration and effects of them described.

1. *Opium*; in use all over the East, and of which the *Turks*, through custom, swallow a drachm.
2. *Peganum Harmala*, Sp. Pl. 638. Syrian Rue. The seeds are sold in *Turkey* for this purpose; and with these, as *Bellonius* relates, the *Turkish* Emperor *Solyman* kept himself intoxicated.
3. *Massac*, of the *Turks*, or *Bangue*, of the *Persians*; prepared from the dust of the male flower of *Hemp*, or from the leaves.
4. *Bangue*, of the *Indians*, from the leaves of the *Hibiscus Sabdariffa*, Sp. Pl. 978.
5. Seeds of various species of the *Datura*, or *Thorny Apple*, of which see *Rumph. Herb. Amb.* 5. P. 243.
6. *Pinang*, or *Betle* of the *Indians*.
7. Roots of *Black Henbane*, (*Hyoscyamus Niger*, Sp. Pl. 257).

8. The

8. The *Hyoscyamus Physaloides*, Sp. Pl. 258.

9. Berries of the deadly Nightshade. *Atropa Bella Donna*, Sp. Pl. 260.

10. Leaves of *Millfoil*, (*Achillea Millefolium*), are used by the *Dalekarlians* to render their beer intoxicating. See *Flor. Suec.* N^o 770.

11. *Tabacco*, and several others less material, are mentioned; such are *Clary*, *Saffron*, and *Darnel*.

Artificial Inebriants are fermented Liquors from farinaceous seeds; *Wines* and *Spirits* drawn by distillation. With these our author ranks the *Nectar* of the gods, and the anodyne medicine of *Homer*, commonly called *Nepenthes*; and the spells by which *Medea* and *Circe* produced their enchantments. He then, in a most striking and lively manner, introduces a fable to illustrate the effects of intoxicating liquors on the human frame and passions, and after having shewn when they may be safely allowed, concludes with cautions and exhortations against the abuse of them.

112. MORSURA SERPENTUM. J. G. Acrell. 1762.

In this tract on the venomous bites of *Serpents*, after a general description of the structure of this order of *Amphibia*, and some observations relating to the *Boa Constrictor*, Syll. 373, (Gigantic Serpent of the *East Indies*) and its capacity of ingorging large animals; of the fascinating power of the *Rattle Snake*, with which also, he says, the *Coluber Berus*, Syll. 377, or *Viper*, is in some degree endued; the author describes the mechanism of the jaw, and the venomous apparatus in *Serpents*; and these are illustrated with a figure. He then gives

gives an abstract of *Raill's Experiments*, and discusses the theory of the operation of the *virus*, in the explication of which, he inclines to that of the mechanical theorists, in attributing the effects rather to an almost instantaneous alteration induced in the fluids, than to its immediate action on the nervous system. The symptoms ensuing the puncture of the various species are then described; those from the *Viper* particularly; and those of the *Asp*, which kills by inducing *sopor* and *lethargy*. Three *Asps* are mentioned by the antients; that called *Ptyas*, he supposes to be the *Coluber Amodytes* of the moderns. See *Syst.* p. 376, described and figured in the *Surinamensis Griliana* of this collection, N^o 16. Besides those of the *Rattle Snake* genus, there are eighteen of the *Viper* genus, furnished with venomous organs; of which a list is subjoined. Among these none strike more suddenly fatal than the *Coluber Naja*, called *Cobra de Capello*.

This author next treats briefly on the various remedies in use among the antients, and notes their general inefficacy. He then comes to discuss the three noted antidotes of *Europe*, *Asia*, and *America*, which are regarded as specifics, against the venom of the most dangerous kinds, in the respective quarters of the globe: such are, *Oil of Olives*, against the *Viper* of *Europe*; the *Ophiorrhiza Mungos*, against the *Naja* of *Asia*, (vide N^o 21 of this collection;) and the *Senega*, against the *Rattle Snake* of *America*. There is nevertheless a small venomous *Viper* (*Coluber Chersia*, *Syst.* p. 377.) in *Sweden*, against the bite of which the oil of olives failed to produce its usual

usual good effects, and the patient died. The author mentions a successful case of the administration of the *Senega* in *Sweden*. He concludes with descending on the *Psylli* of the East, or the Charmers of Serpents; and tells us that M. *Jacquin* of *Vienna* purchased a secret of this kind in the *West Indies*.

113. TERMINI BOTANICI. J. *Elmgren*. 1762.

This paper is incapable of abridgment; it is a methodical arrangement and complete explanation of all the *terms*, amounting to 673, used in describing plants, according to the *Linnaean* method of botany. Somewhat of the same kind was begun in the *Hortus Cliffortianus*, and is also prefixed to the enlarged editions of the *System*. These terms also necessarily occur, and are explained, in our author's *Philosophia Botanica*. In this paper the whole is amplified, improved, and methodised in so excellent a manner, that no one who would gain precise ideas on the subject would wish to be without it.

114. PLANTA ALSTROMERIA. J. P. *Falk*. 1762.

This plant is of *American* origin, and belongs to the *Hexandrous* class and *Monogynous* order of the *System*. There are three species, the two first of which were described and figured by *Père Feuillée* in *Peru*, who ranked them with the *Hemerocallis*, or Day Lily. LINNÆUS received the seeds of this singular and beautiful plant from *Cadiz*, by means of C. *Alstromer*, son of a gentleman of that name, counsellor of the College of Commerce in *Sweden*; and finding it a new genus, gave it his name.

The species, here so completely described and figured, is the *Alstromeria Pelegrina*, Sp. Pl. 461. The virtues of this species are not ascertained, but the sensible qualities of the root rank it with the *Sarsaparilla*; and it appears by *Feuillee's* account, that there is a third species in *Chili*, which the natives use as a substitute for the above plant; and LINNÆUS has hence given it the trivial name of *Salsilla*,

115. NECTARIA FLORUM. B. M. Hall. 1762.

Dulci distendunt nectare cellas. Virgil. Georg. iv. 164. Hence LINNÆUS gave the term *Nectarium* to a particular gland or repository, which in most plants contains the honey. This part in flowers had been but little noticed before LINNÆUS raised it to importance; and, in his System, it affords an excellent mark of distinction, in divers genera and species.

Our author premises some short observations relating to the glands of plants in various classes, which are mostly situated on the leaves or petioles. He then proceeds to the direct design of his tract, which is to point out the several kinds of *Nectaria* in flowers, and to specify the different situation of this part in different classes, orders, or genera. It is therefore an instructive paper to those who would attain a more complete idea of this singular, and heretofore neglected part, the use of which, however, is as yet imperfectly ascertained.

116. FUNDAMENTUM

116. FUNDAMENTUM FRUCTIFICATIONIS.

J. M. Graberg. 1762.

Having briefly stated the improvement of botany, and defined it as a science, M. Graberg proceeds to the explanation of his term. Under the word *Fructification*, he includes not merely the *Corolla*, *Pericarpium*, and *Semina*, simply considered, as *Tournefort* had done, but also the *Calyx*, *Nectarium*, *Stamina*, and *Pistilla*. All these parts, therefore, constitute the organs of *fructification*, and on which the foundation of all true system must be laid. He then briefly traces the rise of system from *Gesner*, through the improvements of *Cæsalpinus*, *Columna*, *Morison*, and *Tournefort*, down to *LINÆUS*, who, by defining, as above, the parts of fructification, first laid the basis of true generical distinctions. He then enlarges on *specific* distinctions, and shews what constitutes *varieties* in plants. He proceeds to consider the generation of *hybrid* plants, concerning which he favours the opinion laid down in the *Generatio Ambigena*, N^o 101 of this collection; that the internal structure, or parts of fructification in hybrid plants, resemble the *impregnated* plant, and the habit, or external parts, that which furnished the *farina facundans*. A singular instance of this kind is brought from the *Verbascum* genus. Finally, he proposes a question, whether all the *species* may not have sprung from one original in each *genus*, by hybrid impregnations. He thinks the contemplation of the numerous species, under many *African*
and

and *American genera*, adds weight to his hypothesis.

On the whole, this paper abounds with curious matter for speculation on this subject, and is highly worthy the regard of those who would enter more minutely into the knowledge of botany.

117. REFORMATIO BOTANICES. *J. M. Reftelius*. 1762.

We are here presented with a very entertaining history of the rise, progress, and present improved state of botany. To this end it is divided into three epochs: 1. Under the *founders* of the science after the restoration of letters. 2. Under the *systematics*. And, 3. under the auspices of the great *Swedish* botanist.

1. Among the restorers of botany, *Brunsfellius*, *Tragus*, *Gesner*, *Fuchsius*, and *Cordus*, stand foremost in the list. They may be said to close with *Caspar Bauhine*, who by his incomparable *Pinax*, in which he collected all their synonyms into one work, gave use to their writings and improvement to the study, which otherwise it could not have acquired.

2. *Bauhine* having laid this foundation, the knowledge of plants made a rapid progress in the seventeenth century, and received vast addition from the discoveries of *Cornutus*, *Marcgraave*, and *Pisa*, in *America*; from those of *Herman*, *Rebode*, and *Cammelin*, in *Asia*; from *Sloane*, *Plukenet*, *Petiver*, and *Sherard*; from *Tournefort*, and *Plamier*; during which period also it was reduced to *system*; from the hints of *Gesner*; first, by *Cesalpinus*, and afterwards, more successfully, by *Morison*, *Ray*, and *Tournefort*.

3. This

3. This author dates the *epoch of reformation* from the first publication by LINNÆUS in 1735; and then collects together into one view the improvement it has received from the labours of this great man. He enumerates the several disciples of LINNÆUS, who assisted him, by their travels into foreign parts; adds a list of those writers that have followed his method; and closes with a sketch of what is yet wanting to give further perfection to the science.

118. PROLEPSIS PLANTARUM. H. Ulmark. 1760.

The theory of vegetation built by *Malpighi* and *Grew*, on the anatomy of plants, and that of *Hales* and others, drawn from what may be called their physiology, has not been followed in the *Linnean* school. LINNÆUS early conceived the idea of an analogy between plants and animals, and speaks of vegetables also, as consisting of a *medullary* and *cortical* substance, (in the former of which the proper life and principle of vegetation resides, and by which alone it is propagated) considering the latter as the organs of nourishment to the former. This idea seems also to have led him to adopt the opinion of *Casalpinus*, relating to the evolution of these two parts, in the order which is mentioned in the 66th thesis; namely, that the *Cortex*, or outer Bark, is ultimately spent in forming the *Perianthium*, or Cup of the flower, besides which, it must be observed, that the leaves are produced from the cortical substance only; the *Liber*, or inner Bark, in the Corolla or Petals; the *Lignum*, or woody part,

in

in the *Stamina* or Chives; and the *Medulla*, or pithy part, in the *Pistillum* and Seed.

Principally to confirm and illustrate these *data* is the design of this *thesis*, which in fact is a comment on a part of the 24th section of the Introduction to the second tome of the *System*, p. 9, containing a concise view of this doctrine. Before the author proceeds to his immediate subject, he recapitulates, with the forementioned, some other principles, relating to the life and organization of vegetables, and then endeavours to prove, by appearances observable in plants, that this arrangement of parts, and this evolution actually exists. As this cannot be so aptly illustrated in annual and other plants, on account of the tender texture, and quick growth, the author endeavours to exemplify it from observations made on the bud-bearing trees; in which he observes, that the full evolution of the parts, from the origin of the bud to the expansion of the flower, as the final act of vegetation in each, is a progressive work, the accomplishment of which requires five or six years, and that it takes place in the following order: That the *Leaves*, which are unconnected with the *medullary* substance, and derive their origin from the *cortical*, are the produce of the first year; and in plants and trees that are furnished with *Bracte*, or floral Leaves, that such are the issue of the second year; and the *Perianthium*, or Cup of the flower, of the third; the *Petals* of the fourth; the *Stamina* of the fifth; and the *Pistil*, &c. of the sixth. Our author endeavours to sustain this theory
by

by a number of facts and observations, tending to corroborate the doctrine advanced in this dissertation.

119. FRUCTUS ESCULENTI. J. Salberg. 1763.

The design of the *Plantæ Esculentæ*, N° 34, *Actæntaria*, N° 73, and the *Macellum Olitorium*, N° 107, is in this paper pursued, and extended to the esculent fruits, which are here enumerated to the number of 133, and their nature and uses briefly pointed out. To which end they are disposed into six classes, as follow:

- | | |
|----------------------|-------------------|
| 1. Berries. | 4. Podded Fruits. |
| 2. Plumbs. | 5. Grain. |
| 3. Pomaceous Fruits. | 6. Nuts. |

120. PROLEPSIS PLANTARUM. J. J. Ferber. 1763.

Mr. Ferber, who is probably the same person that has published *Physico-geographical Travels into Italy*, endeavours, in this paper, as Mr. Ulmark hath done, to illustrate and confirm the theory of vegetation received in the *Upsal* school.

He first treats on the food of plants; which, without entering into any subtle disquisitions relating to its elementary principles and composition, is defined to be the watery tincture of the soil, received by the roots, and transmitted to the *medullary* by the vascular part of the *cortical* substance. He establishes it as a fact, that too great an afflux of nutriment thrown into the *cortical* part, retards the fructification, by compressing the *medullary*. He

thinks this is proved by the state of luxuriant plants in general, and by the effects of depriving them of this superfluity: on which head he quotes the experiments of Mr. *Fitzgerald*, recorded in the *Philos. Transact.* vol. lii. p. 71, as confirming the truth of the theory here advanced.

After having established the cortical part as the organ and deposit of nutriment, he proceeds to shew, that *heat alone* excites to action and vigour, the life or protrusive and expansive force of the medullary part; which is ever spent in propagating the plant, by forming *buds*, *bulbs*, or *seed*, as its final and most perfect issue: and that this intention of nature succeeds in a proportion equal to the degree of nutriment afforded by the cortical, to that of the heat administered to the medullary part respectively.

In the second chapter, M. *Ferber* treats on the origin and evolution of buds; in which he accedes to the doctrine of the progressive perfection of them, mentioned in the dissertation just reviewed.

The last chapter is appropriated to the *Involutions of Plants* in the Seed, Buds, and Bulbs; in which he asserts, that in the seeds of the *Nymphaea Nelumbo*, the very leaves of the future plant are visible. In bulbs the rudiment of the next year's plant is also conspicuous: in like manner buds contain the perfect plant, although the evolution in these requires a longer process.

Those who would attain a complete idea of the theory of vegetation, advanced in the works of our author, are referred more particularly to the following

following papers in the *Amœnitates Academicæ*, N^o 24. *Gemmatio Arborum*, 63. *Metamorphosis Plantarum*, 101. *Generatio Ambigena*, 118, 120. *Prolepsis Plantarum*; and to the *Introduction to the Vegetable System*.

[It may be observed, that there is a set of experiments made by M. *Mustel*, printed in the *Phil. Transf.* vol. lxiii. p. 126, which seem to favour the theory of vegetation here advanced, as far at least as relates to the *cortical* substance being the deposit of nutriment, and the effect of warmth on the expansive and protrusive force of the medullary. Yet it must be allowed that too many difficulties attend every theory on this obscure subject.]

121. CENTURIA INSECTORUM. B. *Johansson*. 1763.

Insects were scarcely noticed before the time of *Conrad Gesner*, whose comprehensive mind extended over the whole field of nature. He, together with *Mouffet*, and *Aldrovand*, may be said to have laid the foundation of entomological science. To these succeeded another set of writers, who were principally employed in investigating the economy and surprizing metamorphoses of insects; such were *Geodart*, *Lister*, *Swammerdam*, and *Reaumur*, to whom may be added *Madam Merian*, who took a voyage to *Surinam*, with the sole view of gratifying a taste for this branch of natural history.

Nevertheless, after all the researches of these ingenious persons, and the labours of our excellent Mr. *Ray*, a defect of system rendered this subject the most difficult to study of any part of natural

tural knowledge: and it will easily be granted, that the true æra of this science commences with LINNÆUS, who very early turned his attention to it, and has established that method, which has been since universally followed, and by which the history of these minuter animals has been greatly extended.

The present catalogue contains the description of an hundred rare, and mostly undescribed species, sent to LINNÆUS from *Carolina, Pennsylvania, Surinam*, and *Java*.

As all these zoological descriptions are supplemental to, and illustrative of, the author's *Systema Naturæ*, they yet retain their value; and cannot be superseded, but by a general history of animals on the same plan.

122. LIGNUM QUASSIÆ. C. M. Blom. 1763.

The *Quassia Amara* (Spec. Plant. p. 552, and p. 1679) or *Bitter Ash*, as it is called in the *West Indies*, is a tree of the decandrous class, the root of which was brought into use first at *Surinam*, by a negro, named *Quassi*, who revealed its virtues. The medicine was known, but the species and true history was long undefined, till at length a branch of the tree, with the flower and fruit, was sent to LINNÆUS from *Surinam*. The root is the part used; and appears to be the most pure and intense of all bitters. At *Surinam* it has acquired a high character in curing the intermitting, exacerbating, and malignant fevers, so endemial to that country; and this (as the author asserts) in cases

cases where the *Quinquina* has failed. It is given in any form, but most commonly in an aqueous infusion, in the proportion of one drachm to a pint, the dose of which is one ounce.

The history of this drug is accompanied with a figure of the leaf, and parts of fructification. Three cases of its good effects (from trials made in *Sweden*) are inserted, and which are not confined to fevers only.

[There is a confirmation of its virtues in febrile cases from Mr. *Farley* of *Antigua*, inserted in the *Phil. Trans.* vol. lviii. p. 81, in circumstances where the Peruvian bark would not stay on the stomach.]

123. RAPHANIA. *G. Rothman.* 1763.

The disease here described is defined in the *Genera Morborum* of our author to be "a spastic contraction of the limbs or joints, attended with convulsions, and excruciating periodical pains." The author gives a full description of this disease from the two most capital *Swedish* writers on the subject. He had seen it himself, and observes, that it had frequently been epidemical in that country: moreover, that some physicians had thought it a new distemper. He has however traced it in the writings of a numerous set of authors, from the year 1596 to 1727; by which it appears to have been common to other parts of *Europe*.

This dreadful distemper sometimes held the sick for three or four weeks, and those who perished

generally sunk under a diarrhoea, or died in convulsions. *Valerian*, *Castor*, *Campbor*, and *Antispasmodics* of the like kind, appear to have been the most beneficial remedies.

He next brings together in one view the *hypotheses* of the various authors, relating to the cause of this malady, some of whom suppose it owing to a certain constitution of the air, others to vitiated grain, *Darnel*; or the *Secale Cornutum*; which were all rejected as unsatisfactory by Dr. *E. Rosen*, one of the last and most intelligent writers on the subject. Our author says, that in *Sweden* it always commenced in autumn, was frequent only among the lower order of people, and consequent upon eating bread made of the new corn. Hence he sought for its origin in impure admixtures with the grain, and finally his own hypothesis attributes it to the seeds of the *Raphanus Raphanistrum*, (Sp. Plant. p. 935) or Charlock; and hence the name given to the disease. The dissertation closes with a figure and botanical description of the plant.

The hand of a master is no where more visible, than in the scientific manner observed by Dr. *Rothman* in drawing up the history of this disease; and it may be proposed as a model in its kind.

124. GENERA MORBORUM. J. Schröder. 1759.

Of this arrangement of diseases, as it stands in LINNÆUS's own publication made in the year 1763, a detailed account hath been given before, to which the reader is referred.

AMENITATES

AMCENITATES ACADEMICÆ, Vol. VII.

1769. pp. 506.

125. MOTUS POLYCHRESTUS. C. Lado. 1763.

There are few who do not require rather to be reminded, than convinced of the many benefits arising from proper exercise. Its signal uses, both as a preservative and restorer of health, are, in this dissertation concisely, but very strikingly delineated.

After some general physiological observations on the effects of exercise, the writer displays its efficacy as a *preservative*; in strengthening the body, procuring the most genial warmth, helping digestion, increasing perspiration, and promoting all the excretions in due time and proportion; in procuring the most refreshing sleep, and, in valedudinary habits particularly, subduing that fruitful source of disease, acidities in the first passages.

He then enumerates those diseases in which exercise is to be considered in a *medicinal* view. In hypochondriac cases, habitual debility, languid appetite, obstructions of the viscera, consumptions, asthma, and in various diseases from laxity, its use has been indispensable.

In speaking of the *Hemicrania*, he relates that LINNÆUS himself had been subject to violent paroxysms of that kind, which usually held him 24 hours, with intervals rarely of little more than a week; and that these fits were excited by very slight causes, even such as the drinking only a spoonful of wine: and that after trying ineffectually various

remedies, the professor attributed the restoration of his health to the use of daily morning exercise, after drinking a large draught of pure water. A case is also related of one who, from his infancy to his 25th year, had never been free from *Ascarides*, but he entirely got rid of them by taking a journey on horseback, as far as *Tornaa*, in *Lapland*.

126. HORTUS CULINARIS. *J. C. Tengborg.* 1764.

Exhibiting a view of all those vegetables, which are, or which the author thinks might, advantageously be cultivated in the fields and gardens of *Sweden*; and describing, in a succinct way, the manner of propagating the several kinds of grain; hops, tobacco, saffron; kitchen or boiling herbs, sallads, pot-herbs; fruit-trees and shrubs; and finally, plants for ornament; their proper soil, and the methods of guarding them against the severity of the climate.

127. HIRUDO MEDICINALIS. *D. Weser.* 1765.

There are nine species of Leeches described in the *Systema Natura*, p. 1079. That used for medicinal purposes is distinguished under the name of *Hirudo (Medicinalis) depressa nigricans, supra lineis flavis sex: intermediis nigro-arcuatis subtus cinerea nigro-maculata*. The anatomical structure and natural history of this worm, the opinion of the antients relating to it, the proper time of procuring it, the method of preserving and applying it, are all discussed. After this, the author points out those diseases in which the mode of blood-letting
by.

by means of Leeches hath been preferred to others; previous to this, however, he quotes *Zacutus Lusitanus* for a case, where the Leech, during its application, made its way into the *Rectum*, and takes occasion to recommend, in any similar instance, the immediate injection of salt water; and thinks it would be equally efficacious in the stomach, if the animal has unwarily been swallowed, which has sometimes fatally happened.

128. OPOBALSAMUM DECLARATUM. *W. Le Moins.*

1764.

Among several articles of the *Materia Medica*, of the production of which physicians had a very imperfect knowledge, none excited more curiosity than this drug, called also *Balm of Gilead*, and *Balsam of Mecca*, from the place of its growth: a drug, the virtues of which were highly extolled throughout all the East, from the most antient times. Near twenty authors are here mentioned, who have written professedly on this production, but few had seen the shrub that produced it. *Prosper Alpinus* says, he saw the plant growing in a cultivated state in gardens near *Cairo*; but it is now doubtful whether that he saw was the true species, though of the same genus. We owe the full discovery of the shrub which yields it to Dr. *Forsk.*, one of those unfortunate gentlemen, who were sent to *Arabia Felix*, on the expedition planned by Professor *Michaelis*, which did so much honour to the late *Frederick V.* of *Denmark*. He saw it growing plentifully in that country, particularly about *Medina*,

Melina, and transmitted a branch to LINNÆUS in 1763. It is now known to be a plant of the *Mono-gynous* order, in the *Ottandrous* class, and belongs to the same genus with the plant that in *America* yields the gum *Elemi*. It now stands in the System under the name of *Amyris* (*Gileadenfis*) *foliis ternatis integerrimis; pedunculis unifloris, lateralibus*, Mant. 65, Syft. Nat. Veg. xiii. p. 299. A complete history of the shrub, and the virtues of the balsam, are exhibited; concerning which we need only observe, that modern physicians have found a substitute in other *natural balsams*, and therefore do not entertain so high an opinion, as the antients did, of the wonderful restorative powers of this drug. The present age hath made us acquainted with the plants which afford the Gum *Elemi*, *Anima*, and *Copaiba*; we yet wait for the full discovery of the *Balsam of Peru*, *Ammoniacum*, *Caranna*, *Myrrh*, *Bdellium*, and *Sagapenum*. This tract closes with a description of the plant, which LINNÆUS honoured with the name of *Forskalea*. It is figured in *Plukenet's Phyt.* t. 275, f. 6, and stands among the *Decandria Pentagynæa*, next to the *Spergula*.

129. DIÆTA ÆTATUM. D. J. Obrquist. 1764.

A succinct view of the changes which the human body passes through, in the several stages from the birth to extreme old age, inculcating the due observance of all those rules respecting diet and regimen, which are best adapted to give vigour to the constitution, and permanence of health, during

during these vicissitudes, pointing out also, under each period, the disorders incident thereto, and laying down proper instructions how best to escape the influence of them.

130. MORBI ARTIFICUM. *N. Skragge.* 1764.

It is too well known that artificers in various trades are almost necessarily subject to dangerous and sometimes lingering diseases, which frequently shorten the period of their lives. Miners, hewers of free-stone, workers of metals, painters, and various others, are notorious instances of this truth. But, as our author observes, they are not the only sufferers in this way, inasmuch as a too close application to any business or profession, will ever be attended with insalutary effects. In this concise view of the diseases of tradesmen, the author professes to have made all possible use of *Ramazzini's* work on the subject; but he has extended that author's catalogue, and availed himself of subsequent observations from various authors, and interspersed several of his own. In brief, by confining his view, through the several employments of mankind, to the immediate operation of causes, and their effects, he has rendered this tract at the same time agreeable, instructive, and interesting.

131. LEPRO. *J. Uddman.* 1763.

The distemper here described has been long endemial in *Norway*, and in several parts of *Sweden*, particularly on the eastern coast of the *Bothnian* Gulph,

Gulph, and in *Finland*; also in the islands of *Oeland* and *Gotland*. So long since as the year 1631, a pest-house was erected in the parish of *Cronoby*, for the reception of the sick of that neighbourhood. Our author defines the *Lepra* from LINNÆUS's *Genera Morborum*, as "a distemper shewing itself in pustules, throwing off dry scales or scurf; attended with moveable discoloured nodes in the flesh, and *rhagades* or dry fissures on the skin." N° 272. Whether the distemper he undertakes to give the history of be the same with the *Lepra Arabum* or *Alexandrina*, the *Javanensis*, and the *Americana*, of all which he has given the characters, he does not absolutely determine, as he inclines to think it a disease various in its appearance. Being a native of *Bothnia*, he had frequent opportunities of inspecting it, and describes it under the following appearances in that country.

It shewed itself in *tubercles*, or nodes, fixed in the fleshy parts, in the forehead, cheeks, arms, hands, and thighs; these were indolent, moveable with the finger, and of a livid hue. There were also tubercles of a livid, or sometimes brownish-yellow cast, in the mouth, palate, fauces, and about the root of the tongue; *ulcers* in the nostrils; *tumours* or thickenings of the edges of the outer ears; *thick lips*; *feet* and *hands* enlarged and inflamed. And in some, *ulcers*, or rather *fissures*, on the skin, creeping, broad, and deep, with callous edges, bleeding from slight pressure or handling, but destitute of pain, as were all the *nodes* and *tubercles*, as far as the author ever observed; but,

but, he says, they were inclined to itch round their bases.

We cannot pursue our author through his enquiries into all the hypotheses relating to the cause of this disorder, howsoever ingenious; it must suffice to observe, that he favours the theory of *Exanthematic Animalcula*, and, from the frequency of this disorder on the sea-coast, where the inhabitants live much upon fish, and particularly herrings, which abound with the *Gordius Marinus* (Syft. 1075) or Sea Hair-worm, adduces a train of arguments to shew, that this distemper probably originates from these worms.

In the cure, he descants upon the *viper-broth* of the antients; and remarks, that the famed viper of the East is a different serpent from ours. He next treats on the inefficacy of mercurials as vermifuges, and quotes Dr. *Scopoli* as observing, that no people are more troubled with worms than those that work in the quicksilver-mines of *Carniola*. At length, against this obstinate and formidable malady, Dr. *Uddman* informs us, that Dr. *Russel*'s method of cure, which consists in giving large quantities of sea-water, assisted by the other part of the process, to which were joined frictions with warm and acrid oils, had been attended with more success than any other.

132. FUNDAMENTA ORNITHOLOGICA. A. P. *Bachman*. 1765.

To all lovers of Ornithology this must have been an acceptable morsel, as containing the rudiments

ments of the science according to the *Linnean* method, and a full explanation of the terms therein employed. It is divided into four parts. In the first, the author gives a brief history of Ornithologists, amongst whom he places *Belon* and *Gesner*, as the first authors worth attention, descending to *Aldrovandus*, *Margrave*, *Willoughby*, and *Ray*, before any thing like system was introduced. To these succeed *Rudbeck*, whose collection of paintings; yet unpublished, are in the hands of *M. de Geer*; *Albin*, *Catesby*, and *Edwards*, the last of whom, from his unwearied diligence, and the opportunities that his situation at *London* afforded him, had excelled all others. To these must be added *M. Brisson's* publication of *Reaumur's* collection, as also *Klein*, *Brunniche*, and *Barrere*.

In the second part, the anatomical structure and external form of this order of animals are described. First, the form in general; then the particular parts, explaining under each the terms used in describing them, and in forming the *generical* and *specific characters*. This part is illustrated with a plate, which has been copied into several succeeding works on this subject.

The third treats on the history of birds; respecting their habitations, migrations, incubation, and the whole of their natural economy. To which is subjoined the method of constructing scientific descriptions, and generical characters.

The fourth exhibits a general view of the use of birds in the police of nature; in diet, and their utility to man: and here we cannot but note the *Chavaria* of

of *Jacquin*, a species of the *Parra* (Syst. p. 260) which is trained by the *Indians* in the neighbourhood of *Carthagena*, who breed large flocks of poultry, that stray in the woods, to defend them against the numerous birds of prey, no one of which will dare to encounter this bird. It is never known to desert the flock, and returns every evening to roost. Our author touches on the prognostics of birds in presaging weather, so well understood by seamen; and finally, as beautiful and pleasurable objects to man.

133. FUNDAMENTA ENTOMOLOGICÆ. A. J. Bladb.
1767.

The knowledge of insects may be said to be the last branch of natural history that raised its head; notwithstanding which, it has of late attained a high degree of perfection: nor can it be too much to attribute this to the excellent arrangement of LINNÆUS, under whose auspices it has extended itself beyond all other parts of zoology.

The plan of this paper is exactly that of the foregoing, and will amply satisfy those who wish to enter on the study of insects. In his first chapter, Mr. *Bladb* gives a chronological list of 32 writers on the subject, beginning with *Monffet*, who published in 1634, and ending with *Schæffer* in 1767. But the substance of this dissertation has been translated and published in *English* by Mr. *Curtis*, so that any further account of this work is now superseded.

134. FUNDAMENTA

134 FUNDAMENTA AGROSTOGRAPHIÆ. H. Gabn.
1767.

M. Gabn professes to have undertaken this tract, partly with a view to aid the good designs of those societies, which, to the honour of their founders, have been established in several parts of Europe, for the advancement of agriculture; with which the subject of this paper is intimately connected.

In this large natural class of plants, called *Gramina*, are comprehended also the *Cerealia* or Grain, and, including all that are hitherto known, do not amount in the System of our author to fewer than 430 species; in that of others to many more. Such a number of plants, so nearly alike in their habit as these, must require numerous subdivisions, and nice distinctions, to discriminate each species. To effect this is the intention of this tract, in which, after some curious preliminary observations, relating to the station and uses that nature seems to have assigned to some particular species, and a list of the common grasses, classed according to their native places, the author presents us with an historical account of the principal writers who have treated separately on this class, exhibiting under each a brief view of their systems of classification. These are C. Baubine, Rudbeck, Ray, and above all, Scheuchzer, who with incredible labour has described all the species. To these might be added several other writers, who have also illustrated this branch of botany, particularly Morison and Haller. Then follows the description of the natural character
and

and habit of a plant of this class, intended to convey a full explanation of the *terms*, referring to two explanatory plates, on which is engraven a flower of each genus.

Various have been the methods invented to class this tribe; our author here gives them a new disposition, entirely independent on the sexual system, established on the *figure* and *number* of the valves composing the Glume or *Calix*; and those of the *flower*, classed under two general heads, as they grow either in the form of *Spikes* or *Panicles*.

In all *natural classes* the distinctions of the genera depend on minute differences, which require very nice discriminations; the author therefore proceeds to point these out in several instances of this tribe: he has also added the *exceptions* that arise under the several genera in various species, an imperfection that attends all systems. He concludes with a full explanation of his tables, which are better adapted to convey to a learner a true idea of this class, than any that we are yet acquainted with; since *Schreber's* tables are not adapted to common use in *England*.

135. VARIETAS CIBORUM. *A. F. Wedenberg*. 1767.

The immense variety in food, which custom, necessity, and luxury have introduced, is here in a concise way displayed: the simplicity of some nations, whether arising from penury or from climate, the *Apician* luxury of others, and the various effects of the culinary art, are also briefly pointed out; then follows a division of aliments into classes, thus,

A a

1. Watery.

1. Watery.

2. Dry.

3. Pinguious.

4. Styptic.

5. Acid.

6. Bitter.

7. Viscous.

8. Salt.

9. Sweet.

10. Acrid.

Under each are subjoined summary observations, relating to the effects of a regimen, in which any of these classes form the prevailing part; and to its tendency in producing particular diseases. The author then speaks on the great power of custom on the habit, and concludes with inculcating the *Ne quid nimis*, an axiom of much higher importance than any of those nice discriminations relating to the *wholesome* and *unwholesome*, which so often perplex the minds, and disturb the peace of many well-meaning people.

136. FERVIDORUM et GELIDORUM usus.

C. Ribe. 1765.

Dr. Ribe fixes the heat of the human body between 35 and 37 of the *Celsian* thermometer, and pronounces all *foods* and *drinks* which arise to 40, to be *fervid*. He considers the constant and daily use of hot aliments as an abuse that calls for the strictest animadversion; and shews, by the effects of them on the solids of the human body, their tendency to produce a variety of chronical diseases, which he here specifies. Man is the only animal accustomed to hot foods, and is almost alone affected with carious teeth. Hence he takes occasion to condemn, in a forcible manner, the custom of drinking hot tea, coffee, and chocolate, and dissuade

dissuade his countrymen from the practice of eating hot bread, boiled rice, puddings, and other like foods, to which perhaps, from the severity of the climate, the *Swedes* are more addicted than some other nations. He does not however conclude this part without pointing out those cases where *tepid*, and even *fervid* liquors, are both allowable and beneficial; such are some fevers, several of the spasmodic diseases, and those resulting from rigidity of the fibres.

In the second part, the author reprobates the use of *iced creams*, *jellies*, and *drinks*; and dissuades especially from a sort of food, unknown among us, though frequent in *Sweden*: this is *congealed oysters*. The pernicious quality of these he endeavours to prove by several cases. He is also not less decisive in condemning a kind of *iced malt-liquor*, drunk in *Sweden* in the summer months. Observations on the diseases occasioned by the abuses of all these, and a recital of the advantages of simply *cool* liquors, conclude this dissertation.

137. POTUS THEÆ. P. C. Tilleus. 1765.

At the time of its publication, this treatise had perhaps the merit of being the most complete history of this shrub; occasioned by the lucky incident of its arriving safe in a vegetating state in *Sweden*, through the care and skill of Capt. *Ekeberg*, who is said to be the first that succeeded in the several attempts that had been made to introduce it into *Europe*. LINNÆUS had suggested the putting the seeds into earth just as the ship left *China*;

and the success confirmed the propriety of his method.

Tea is now known to be the leaves of a plant of the *monogynous* order, belonging to the *polyandrous* class; the flower of which is succeeded by a *tricoccus Capsule*. The writer describes the shrub at large, gives all the synonyms, and mentions those authors who have given figures of it: among these, *Kämpfer's* is the only exact one. It was long believed that there was but one species; but the *Green Tea* is now said to be the produce of another, which differs from the *Bohea*, in having nine petals in the flower, whereas the *Bohea* hath but six. It is not known to grow spontaneously elsewhere than in *Japan* and *China*, in which latter kingdom it is cultivated in all the provinces from *Canton* to *Pekin*.

Mr. Tilley delivers the mode of preparing the leaves, of which we have a diffuse and most exact account by *Kämpfer*, who, having resided two years in *Japan*, was enabled to give the most complete information. The origin of the use of *Tea* in those countries is too remote to be ascertained, and commerce has now extended its use to almost every corner of the globe. The high price of *Tea*, at its first introduction, induced many physicians to think of a substitute; and it is well known that *Simon Pauli* thought the *Myrica Gale*, Sp. Pl. p. 1453, to be the shrub itself. Other *succedanea* are mentioned also by our author; such as the leaves of the

Prunus spinosa, Sp. Pl. 681. Sloe Tree.

Origanum vulgare, Sp. Pl. 824. Wild Marjorum.

Rubus

Rubus arcticus, Sp. Pl. 708. Arctic Bramble.

Veronica officinalis, Sp. Pl. 14. Male Speedwell.

Veronica Chamædrys, Sp. Pl. 17. Wild Germander.

Chenopodium Ambrosioides, Sp. Pl. 320. Mexican sweet Blite.

Capraria biflora, Sp. Pl. 875. Sweet-weed or Goat-weed.

To this part of our author's treatise may be added the well-known sophistication of Tea practised by the smugglers, in some of the southern parts of this kingdom, who have reduced to a regular process the management of the leaves of the *Asb* and *Elder* particularly; which, when prepared, is called *Smouch*, and mixed, as is said, in the proportion of one third, with the ordinary *Teas*. To what an extent the trade in this sophisticated Tea had been carried, to the detriment of the trees, may be imagined, when the reader is informed, that an act of parliament has lately been obtained to prohibit it, under very severe penalties. But to return to our author.

He next considers the sensible qualities of *Tea*, its fragrant odour, and styptic taste; and from its place in the System, botanically considered, with respect to the *natural orders*, he thinks it highly probable, that what *Kämpfer* relates of its *narcotic* quality, when green, is consonant to truth. And, from similar instances, he proves that this quality may readily be thrown off by that degree of heat which the sudden exsiccation of the leaves require.

In discussing the virtues of Tea, he observes, that the *Chinese* recommend the use of it in all lethargic

diseases, but condemn it in ophthalmies, colics, and palsies. From *Kalm*, he tells us, the *Indians* of *North America* knew not the inconveniences of carious teeth, debilitated stomachs, nor the women difficult labours, until the introduction of Tea among them. That the physicians at *Hamburg*, *Amsterdam*, &c. attribute the frequency of the *Leucorrhœa* among the women of condition to their indulgence in this liquor. And further, that *Boerhaave* ascribed to the sipping hot Tea, a schirrosity in the glands of the œsophagus, which he met with on dissection, and which he thought a disease not known to the antients.

The author subjoins some observations on the important and extensive influence of Tea in a mercantile view, and as an article of luxury; and concludes with the history of the introduction of the living plant into *Europe*, as above mentioned, hinting also at the possibility of naturalizing it in other countries. A plate of the *Babea Tea* shrub is annexed.

138. POTUS CHOCOLATÆ. *A. Hoffman*. 1765.

We are now come to the last, and what our author thinks the most salubrious, of the three elegant articles of luxury that the moderns have acquired by the discovery of the *East* and *West Indies*. Chocolate is the produce of an *American* intertropical tree, flowering twice in a year, and singular in producing its fruit from the body or trunk, and not from the branches. It belongs to the *Pentandrous* order of the *Polyadelphous* class; and is distinguished by the name of *Theobroma* (*Cacao*) *foliis integerrimis*, Sp. Pl. 1100.

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We are presented with three methods of preparing Chocolate, as practised by the *Indians*, by the *Spaniards*, and by others, as follow: The *Indians*, to one pound of the roasted nuts, put half a pound of sugar, dissolved in rose-water, and half a pound of flour of Mays, or *Indian* corn. The *Spaniards*, to six pounds of the nut, add three and an half of sugar, seven pods of vanillas, one pound and an half of flour of *Indian* corn, half a pound of cinnamon, six cloves, one drachm of capſicum, and whatſoever is thought requisite of the rouseau-nut to improve the colour, together with amber-grease or musk, to impart an agreeable scent. In the other, and more common way, to seventeen pounds of nuts are added ten pounds of sugar, twenty-eight pods of vanillas, one drachm of ambergrease, and six ounces of cinnamon.

The *Vanillas* are the pods filled with minute seeds, from a parasitical climbing plant, described under the name of *Epidendrum Vanilla*, Sp. Pl. 1347, belonging to the *Gynandrous* class, with the *Orchides*, and like them reputed an aphrodisiac. Spices are added to give pungency, and mitigate the oleaginous quality of the nut.

Having detailed the history of the nut, the author considers Chocolate as an *aliment*, and in a *medicinal* view. He recommends it in *emaciating* diseases, both as aliment and medicine; and next very strenuously in *hypocondriacal* cases, and in confirmation adduces that of Cardinal *Richelieu*, who, he says, was restored to health by living on Chocolate. He is not less copious on its good effects against the *Hemorrhoids*; in aid of which he

relates a singular case, communicated to him by the President himself.

139. SPIRITUS FRUMENTI. *P. Bergius*. 1764.

The *Arabians* have the credit of inventing the alembic, and the distillation of ardent spirits; which they are said to have used principally, if not at first entirely, as solvents only, to extract the virtues of simples, and exhibit them in the form of tinctures. Our author observes from *Raymond Lilly*, that they were unknown in *Europe* at the commencement of the 14th century; but the distillation of spirit from fermented grain is attributed to *Arnoldus de Villa Nova*, about the year 1315. Soon after this time *Brandy* was made in *Sicily*, first from spoiled grapes, and very early became an article of great commerce at *Venice*.

Having enumerated the properties of this inflammable fluid from *Boerhaave's* chemistry, and described a method of preparing the grain for distillation, as practised in *Sweden*, which is different from ours, the author discusses the salutary effects of *Spirits*, medicinally taken, as analeptic, diuretic, cordial, and stomachic, under all which heads, he lays down apposite rules for their use. Diluted with coffee, he recommends brandy as a diuretic in calculous cases. He much prefers it to wine, as a preservative against contagious dysenteries; and asserts, that this was clearly proved among the seamen of the *Swedish* fleet, in the expedition of 1742. He then considers the imprudent use of it; and, from its power in coagulating the fluids and indu-

rating

Raising the solids, deduces its effects in producing inflammatory fevers, consumptions, dropsy, jaundice, hemorrhoids, tremors, phrensy, &c. and concludes with some well-digested observations on the general abuse of fermented liquors, and upon their influence on society, both in a political and moral view.

140. MENTHÆ USUS C. G. Laurin. 1767.

Mint is one of those vegetables which have retained their character in medicine from the earliest ages, it having been used by the *Greeks* and *Romans*. *England*, above all other countries, abounds with plants of this genus, of which there are not less than eleven species mentioned by the *English* botanists as indigenous, the *Pulegium*, which is a true species of *Mint*, being included.

In the *natural orders* of botany, *Mint* is among the *verticillated* plants, which are in general supposed to have *resolvent* and *nervine* qualities: and from these powers arise the good effects usually ascribed to this plant, in a variety of disorders here particularly specified.

141. PURGANTIA INDIGENA. P. Strandman. 1766.

After some preliminary observations relating to the opinions of the *empirical* and *dogmatic* sects in medicine, as connected with his subject, and some encomiums on the institution of hospitals, as affording a field of observation and experiment to the physician, which private practice does not allow, the writer presents us with a catalogue of such

such vegetables as are endued with a purgative quality, confining his tract to such as are either indigenous, or easily cultivated in the gardens of Sweden. Under each he mentions the place of growth, the part used, its preparation, the dose, the effects, and the disorders in which it has principally been employed as a purgative. We subjoin a summary catalogue.

1. *Rhamnus Frangula*, Sp. Pl. p. 280. Frangulæ Cortex. Bark of berry-bearing Alder.

2. *Rhamnus Catharticus*, Sp. Pl. 279. Spinæ Cervinæ Baccæ. Buckthorn Berries.

3. *Linum Catharticum*, Sp. Pl. 401. Purging Flax.

4. *Eupatorium Cannabinum*, Sp. Pl. 1173. Hemp-agrimony. Leaves. Root.

5. *Genista Tinctoria*, Sp. Pl. 998. Dyers-weed. Seeds and Flowers.

6. *Prunus Spinosa*, Sp. Pl. p. 681. Acaciæ Nostratis Flores. Flowers of Black-thorn, or Sloe-tree.

7. *Berberis vulgaris*, Sp. Pl. 471. Berberry Bark.

8. *Convolvulus Sepium*, Sp. Pl. 218. Root of the great Bindweed.

9. *Valeriana officinalis*, Sp. Pl. 45. Valerian Root.

10. *Bryonia alba*, Sp. Pl. 1438, Bryony Root.

11. *Sambucus Ebulus*, Sp. Pl. 385. Root of Dwarf Elder.

12. *Lichen Aphthosus*, Sp. Pl. 1616. Fine green Liverwort, or aphthos Liverwort. The author relates the case of a young woman, to whom this medicine had been given as an anthelmintic,

who voided under its operation, instead of the usual intestinal worms, a large quantity of the *Larva* or Maggots, of the *Phalena Pinguinalis*, a species of Moth, described in the System, p. 882.

13. *Lycopodium Selago*, 1565. Firr Club-moss.

14. *Thalictrum aquilegifolium*, Sp. Pl. 770. Feather-ed Columbine, or Meadow Rue. The Root.

15. *Polypodium vulgare*, Sp. Pl. 1544. Polypody.

16. *Viola odorata*, Sp. Pl. 1324. Root. Doubtful.

17. *Gratiola officinalis*, Sp. Pl. 24. Hedge Hyssop.

18. *Asarum europæum*, Sp. Pl. 633. Asarabacca.

19. *Rheum palmatum*, Sp. Pl. 531. Rhubarb.

20. *Mirabilis longiflora*, Sp. Pl. 252. The author thinks it probable that the *Jalap* of the shops is a root of this genus. Some *English* botanists have rather supposed it to be a *Convolvulus*.

21. *Momordica Elaterium*, Sp. Pl. 1434. Wild or Spirting Cucumber. The fecula of the Juice.

The *Hedge Hyssop*, and *Asarabacca*, are emetics; and the author thinks the root of the *Sweet Violet* is endued with the same quality as the *Ipecacuanha*, which is now pretty well determined to be of that genus. See *Syst. Nat.* 2d ed. xiii. p. 669.

142. SIREN LACERTINA. *A. Osterdam.* 1766.

A complete history of the *Lizard Siren*, or Mud-Inguana, of *Carolina*, a new amphibious, biped, eel-shaped animal, furnished both with gills and lungs; the former placed entirely without the body. This animal is so singular in its structure, as to have occasioned LINNÆUS to form a new order, under the term *Meantes*, which is placed between the *Amphibia* and *Nantes*. It is sometimes
seen

seen two feet long, and sends forth a cry somewhat like that of the young of the Duck kind, but more acute and clear. It is described and figured by Mr. *Ellis*, in the *Phil. Trans.* vol. lvi. p. 189.

143. METAMORPHOSIS HUMANA. *J. A. Wadstrom.*
1767.

An ingenious and elaborate dissertation on the changes which the human system undergoes in the several stages of life, from the birth to extreme old-age, divided into twelve periods. Under each of these, Man is considered, with respect to all those changes which succeed each other, in the structure and discharge of the several functions of the body; or otherwise, both anatomically and physiologically; with respect to the diseases of each stage; and finally, he is throughout contemplated in regard to the powers of the mind, the affections, and the passions.

This detailed view is succeeded by tables, in which, under the same periods, is delineated the different temperature of the body; the different degrees of muscular strength; the powers of motion; the appetites; affections; passions; the exercise of the mental faculties, and their aptitude to works of genius, science, and judgment; the powers of speech and oratory; and the whole closes with a *Scala Aetatum*, containing all the tables brought together, and scientifically opposed to each other. This paper is closely connected with, and properly accompanies, the *Senium Salomoncum*, N° 90, and the *Dieta Aetatum*, N° 129.

144. CURA GENERALIS. J. G. Bergman. 1766.

In a foregoing part of these memoirs, a short account was given of LINNÆUS's *Theory of Physic*, or his *Clavis Medicinæ*; in which was observed the distinction that he has made between the *cortical* and *medullary*, or in other words, the *vascular* and *nervous* systems of the human body. The present dissertation is a comment on the first part of the *Clavis*, relating to the diseases of the vascular system. Dr. Bergman traces the immediate effects, both upon the solids and fluids, of any excess or defect in the *Air*, *Nourishment*, *Motion* and *Rest*, *Sleep* and *Watching*, *Excretions* and *Retentions*. The *Passions*, as being more immediately connected with the *medullary*, or nervous system, do not belong to his scheme. Having discussed the ill consequences of these errors to the constitution, and remarked the diseases originating from thence, he turns to the consideration of the old canon, "that diseases are cured by their contraries," and, agreeably to the theory of his master, that such as spring from these errors are principally the objects of dietetic medicine, and are to be cured by *Sapids*, he produces the several classes of *Aquosa*, *Sicca*, *Acida*, *Amara*, *Pinguia*, *Styptica*, *Dulcia*, *Acrida*, *Mucosa*, *Salsa*, and shews their power in preventing and curing diseases; concluding his tract with the distinction between the rational and empirical physician.

In mentioning the scurvy, and the effects of salted meat, he relates a memorable instance of
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an arthritic patient, who, after taking, in one summer, 1800 boles of Mrs. *Stephens's* medicine, became in the highest degree afflicted with the genuine scurvy, which he thinks might fairly be attributed to the quantity of alkaline salt contained in that medicine.

145. *Usus Muscorum.* A. H. Berlin. 1766.

The uses of this class of vegetables in well-cultivated countries, and in benign climates, can be but little known; in the northern regions they are conspicuous. The writer, after having mentioned those botanists who have particularly attended to this class, and given due praise to the matchless work of *Dillenius* on the subject, displays the particular advantages of mosses in the general economy of nature; for instance, the *terrestrial Liverworts* lay the first foundation of soil on barren rocks, as the *Sphagnum*, and many other *bog mosses*, do in marshy and boggy places. In human economy, nothing is more remarkable than the utility of the *rein-deer mofs*, in the arctic regions. Many of the liverworts are ingredients in dyeing; and several mosses have their place in medicine, among which particularly may be mentioned the *Lichen Islandicus*, Sp. Pl. 1611. Iceland, or Eryngo-leaved Liverwort, of the virtues of which, in consumptions, Dr. *Scopoli* has written a distinct treatise, published in the *Annus 2^{das} Historico-naturalis*. Lips. 1769.

The reader will find a paper, written by the author of this volume, on the uses of this order of plants,

plants, in the *Philosophical Transactions* for the year 1758, vol. 1. p. 652—687.

146. *MUNDUS INVISIBILIS.* J. C. Roos. 1767.

The subjects of this thesis have been much agitated of late years by the philosophical *literati*, who have been skilled in the use of microscopes. It turns principally on the discoveries of the Baron *Munkbausen*, relating to the *smut* of wheat and barley, and to the dust of the *Lycoperda*, or Puff-balls; *Agarics*, and other *Fungi*; which he has asserted to be no other than the *ova* of *animalcula*: from whence had arisen a doubt, whether mushrooms should be ranked with vegetables or animals. LINNÆUS adopted, though with great hesitation, the Baron's opinion, as appears from his *Systema Nat.* p. 1326; but his sentiments on this subject, after the experiments made by our late Mr. *Ellis*, who, at his request, instituted a course professedly to determine this point, do not appear. The result of Mr. *Ellis*'s enquiry proved the negative, as may be seen by his papers, published in the *Phil. Transf.* vol. lix. p. 138, and *Gent. Magazine* for 1773, p. 316. Much curious matter on this subject occurs in Mr. *Roos*'s paper; but we conclude with an important fact, related from the Baron's book, who recommends the seed wheat to be washed in a lye made of lime and sea-salt; by which practice, for twenty years, he had secured his crop from smut, although his neighbours around him had sometimes lost a third part of theirs. In the latter

ter part of the thesis, the author descends on *antibematic animalcula*, and appears to favour that hypothesis; candidly confessing, however, the difficulties that occur, and concluding with a string of doubts, proposed by way of queries, relating to this abstruse point.

147. USUS HISTORIÆ NATURALIS. *M. Aphelin.*
1766.

This ingenious discourse, written by a young *Russian* nobleman, a student at *Upsal*, is one of the most entertaining and best-digested papers on the subject, that this collection affords, and cannot fail to carry conviction with it. It is divided into two parts: in the first, he displays the necessity of a knowledge of natural history at large, in leading the way to improvements in all branches of agriculture, and in gardening: the utility especially of being acquainted with the indigenous plants of the country, an object greatly neglected, and which, if more attended to, must lead, as he endeavours to shew, to the improvement of woods, hedges, the culture of barren ground, wet meadows; to the extirpation of hurtful plants, and the better adapting pastures to the several kinds of cattle. To illustrate this latter position, he mentions a memorable fact, related by LINNÆUS in the *Iter Scanicum*, of a number of goats which were perishing in an island that abounded with the Reed Bent Grass, (*Agrostis arundinacea*) a plant on which horses feed with avidity, and thrive greatly.

greatly. Thus also, on the other hand, goats will riot and fatten on the Meadow Sweet, (*Filipendula Ulmaria*), whilst horses, and horned cattle especially when they are young, will not touch it.

The second part abounds with curious observations concerning the economy of domesticated animals; in treating on which he points out both the most nutritive and noxious herbs to each species; descending afterwards to domestic fowls, and the inferior parts of the animal creation, which are more particularly the objects of husbandmen. A plate is added, on which is engraven, together with a rare species of *Henbane*, the *Aëta Cimicifuga*, Sp. Pl. 722, famous in *Russia* and *Tartary*, beyond all other things, for expelling bugs, and some other noxious insects.

148. NECESSITAS HISTORIÆ NATURALIS ROSSIÆ.

A. De Karamyschew. 1766.

This paper is also written by a *Russian* nobleman, and is intended to excite his countrymen to a diligent cultivation of the study of natural history, as a science eminently beneficial to a rising people. To this purpose he endeavours to raise their emulation, by shewing the progress it has made in the eastern nations of *Europe*, displaying its beneficial influences; and by exhibiting the vast field which the empire of *Russia* affords. He then gives some biographical anecdotes of those who have improved the natural history of that country, under the patronage and command of their sovereigns, from the time of *Peter the First*.

Such were *Messerschmidius*, *Buxbaum*, *Gmelin*, the last of whom sojourned in *Siberia* from 1733 to 1743. *Krascheninnikow*, *Martin*, *Steller*, *Amman*, and others. He then recites, from the *Museum Petropolitanum*, a list of zoological subjects for further investigation, which, although natives of *Russia* and *Siberia*, are yet very imperfectly known. He endeavours to persuade his countrymen to the culture of a number of useful vegetables, by presenting them with a long catalogue of exotics, that have been in some sort naturalized at *Abo* in *Finland*, under the care of Professor *Kalm*. His tract concludes with a list of plants which are natives of *Siberia*, extracted from the MSS. of *Heinzellmann*, *Gerber*, *Lerche*, and *Schober*; all which MSS. were in the hands of LINNÆUS. A figure of a specious *Siberian* plant accompanies this tract. It is the *Fumaria Spectabilis*, Sp. Pl. p. 933.

149. RARIORA NORWEGIÆ. H. Tonning. 1768.

The pen of a learned, ingenious, and skilful naturalist is visible in this agreeable specimen of natural history. The writer first traces the origin of the science among the *Danes*, whose monarchs have lately been its celebrated patrons. Among the principal modern writers stands *Gunner*, the late Bishop of *Dronthem*, who, to the highest merit in his sacred profession, also added an exquisite taste for natural history, and a consummate knowledge in that science, as his writings fully testify. Neither is Mr. *J. Strom* forgotten, who published, in 1762, a natural history of *Søndmore*, in the diocese of

of *Bergen*. After this literary introduction, the principal intention of the writer is to exhibit lists of the more rare subjects of nature, especially such as are not common in *Sweden*. Agreeably to this design, we have a catalogue of the peculiar plants of *Norway*, the alpine, some other rare species, and particularly of the *Fuci*, or Sea Wracks, with which the coast of *Norway* abounds. Also a list, from the *Dronthem Aets*, tom. II. of all the *American* fruits, which are thrown on the *Norway* shore every year, and which have raised much speculation among the curious, to account for their transmission so particularly to that part of *Europe*. The author asks the solution of this difficulty from the learned; inasmuch as they are sometimes found in no inconsiderable quantity, and so recent as to germinate, upon being properly secured from the climate. These fruits are usually the *Cassia Fistula*; *Anacardium*, or Cashew Nuts; *Cucurbita Lagenaria*; Bottle Gourds; Pods of the *Mimosa Scandens*; Sp. Pl. p. 1504, called *Cocoons*, in the *West Indies*; Pods of the *Piscidia Erythrina*, called Dog-wood Tree by *Sloane*; and Coco-nuts.

The author next pursues his catalogue through all the classes of animals, using only the *Linnean* trivial names, and referring to the *Fauna Suecica*, to *Gunner*, and to *Strom*. It may be observed, that the latter writer thinks that what deceived the fishermen, and by their means Bishop *Pentteppidan*, under the appearance of a serpent of the extraordinary length described in his *History of Norway*, was no other than a string of sturgeon, which, at the stated time of the year, follow each other in a line in immense

numbers, with only their backs above water; which might suggest the idea of the waving motion of a serpent.

The remaining part of the tract chiefly respects the medicinal plants, and the diseases of the country. An account of some vegetable productions, which form an article of commerce, being exported in considerable quantities, among which are reckoned the Cloud-berry, (*Rubus Chamemorus*, Sp. Pl. 708), and the *Lichen Islandicus*, mentioned in the account of the *Ufus Muscorum*, N° 145. Then follows a list of medicines easily obtained, or such as are in use among the country people. Among these the good effects of the *Linnea borealis*, Sp. Pl. 880, in rheumatic disorders, are well known, and much celebrated. He relates, on the authority of the President himself, that two men, who had been confined to their bed for several months by ischiatic pains, were cured in three days by a strong decoction of it. Its operation appears to have been of the sedative kind, since the patients were thrown into a sleep, which lasted sixteen or twenty hours. He confirms the opinion of the *Lepra* arising from the *Hair Worm*, as mentioned in N° 131 of this collection; and has some observations relating to the *Colica Lapponum*, described in M. Montin's thesis, N° 27. The dissertation closes with the description of an *African* plant, called by LINNÆUS *Gunnera*, in honour of the Bishop of *Drontheim*.

150. ITER in CHINAM. A. Sparrman. 1768.

We presume this is the same person who afterwards made the voyage round the world with Dr. Forster, in Capt. Cook's ship, and has since travelled over a large tract of country in southern Africa, in pursuit of those gratifications which his zeal for natural history enabled him to enjoy. The present voyage, which was begun Dec. 28, 1765, and finished July 21, 1766, was made with Capt. Ekeberg, who has been mentioned as having first introduced the *tea shrub* into Sweden. This epitome of the voyage consists of little more than an enumeration of those subjects of natural history, which occurred to the journalist, both at land and at sea; for as he makes use of the *trivial* names, all descriptions are superseded; except that, in the notes, some of those imperfectly known are more amply detailed.

Bb 2

OBSER-

OBSERVATIONS, tending to shew the Utility of botanical Knowledge in Relation to Agriculture, and the feeding of Cattle : accompanied with a Translation of LINNÆUS's *Pan Suecus*, accommodated to the *English* Plants, with references to Authors, and to Figures of the Plants.

THE science of botany certainly holds its most dignified station when subservient to *medicine*; but its utility does not terminate in this alone, though it has too long been considered as having no other connection. This, notwithstanding, is but a partial, nay even an injurious idea of it, for nothing has more retarded its usefulness than this contracted notion. It has a relation, in a variety of ways, to many other arts and sciences. Among which may be mentioned the *art of painting and dying*; but of all others *Agriculture* certainly claims the strictest relation, some of its most important branches being greatly dependent upon it, and others, from an happy application of it, being perhaps capable of further emolument. The subsequence paper, it is presumed, will, in some measure, illustrate this truth. But howsoever great the real dignity and importance of this art, yet, it must be allowed, that it has not been cultivated sufficiently on scientific principles, nor advanced in equal proportion with other branches of knowledge. It is not many years since Dr. *Home* ob-

served,

served, that *Virgil* and *Columella*, old as they are, remained almost the only writers worth consulting upon this subject. The writings of Mr. *Hart*, Dr. *A. Hunter*, Lord *Kaims*, Mr. *Young*, and of many others since published in our own nation, we hope have superseded Dr. *Home's* remark; and, from that laudable spirit now diffusing among us throughout *Great Britain*, for the improvement of *Arts and Sciences*, under the protection of our public institutions, we may expect to see every branch of agriculture studied as it deserves, and attended with that success which commonly results from the right application of knowledge to the purposes of human life. On the continent, the *Swedes* are making large and daily progress in the improvement of this branch of *economics*. In *France*, Mr. *Du Hamel* has rendered himself conspicuous by his writings on this subject; and in various parts of *Europe*, societies have been formed with a professed view to this end. We cannot help mentioning, with peculiar pleasure, that of *Padua*, over which Dr. *Arduin* presides, who, by the munificence of the *Venetian* state, has a garden allotted for the cultivation of such vegetables as they wish to subject to experiments in agriculture, dyeing, and other arts. A noble institution, and worthy of imitation!

Amidst that almost infinite variety of vegetables, with which the beneficent hand of nature has replenished our earth, those which go under the general name of *Grasses* form the principal food of our cattle; next to these, among the *natural classes* of plants, none are more acceptable than the

diadelphous or leguminous herbs: of this class is the *Clover*, so much cultivated in *England*; the *Saint Poin*, or *Cocks-head*; and the *Lucern*, or *Medic-fodder*, in *France*. Besides these, our horses, horned cattle, sheep, &c. will all, in their turn, eat with equal pleasure, and some with more avidity, a great variety of other vegetables. Numerous instances occur where one species of animals will feed greedily upon those herbs which others refuse to touch, and will even almost famish rather than eat. Some plants are highly noxious, and even poisonous, to certain kinds of animals, while they are eaten by others without the least subsequent ill effect: to instance, the *Cicuta Virosa*, or long-leaved Water Hemlock, the most virulent plant which grows spontaneously in *England*, (but happily is not common) is fatal to cows, when, through scarcity of food, they are obliged to eat it; yet sheep and horses feed on it with impunity, and goats even greedily devour it.

*Videre licet pinguescere sæpe Cicuta
Barbigeras pecudes, homini quæ est acre venenum.*

LUCR.

Facts of this kind must, in some measure, have been obvious to the most incurious of mankind, even in the earliest ages. The first race of shepherds had daily instances, among their flocks, of the selection and refusal of particular herbs, and subsequent observations must have multiplied and confirmed them. But they were still only known in the general, and no experiments had been instituted to ascertain the precise species thus eaten or rejected.

rejected. The facts are, at this time, undeniable. It is well known that *Flag-flowers*, *Hounds-tongue*, *Hanbane*, *Mullein*, *Nightshade*, *Hemlock*, several *Docks*, *Arsmart*, *Agrimony*, *Celandine*, several *Crowfoots*, *Marsh Marigold*, *Horehound*, *Figwort*, many *Thistles*, *Fern*, and other plants, are commonly neglected by our horses, and horned cattle, and stand untouched, even in pastures where it might be expected that necessity should constrain them to eat any thing. These are but a few out of many instances; there are more than is commonly imagined, and it was desirable, in consequence of these observations, that a course of experiments should be instituted to elucidate this instinct, in that part especially of the brute creation which is so immediately subservient to mankind. The utility of such experiments must be evident, as they must necessarily lay the foundation of farther improvements in the economy of cattle. The intelligent husbandman would, by this means, have it in his power to rid his pastures of noxious and useless plants, and give room for the salubrious ones.

In this view of the affair, it will be seen that physicians are not the only persons who may study botany to advantage; many others would find, not only a fund of pleasure from this study, but numberless other advantages resulting from the knowledge of the plants of their own country. In the instance before us, science has opened the way, and surely it is not too much to say, that it evidently points to greater improvements, in one of the most important branches of agriculture, as it relates to the economy of cattle. More than this ought

ought not to be expected from its aid. It is to the intelligent grazier and the gentleman, well versed in the knowledge of the *indigenous* plants, fraught with careful observation, and practised in the economy of cattle, that the rest must be owing. Nothing but the want of this knowledge, in such gentlemen as reside in the country chiefly, can deprive us of the benefit which might otherwise accrue from reducing it into practice. The eradicating from pastures poisonous and useless weeds, would be but one, although indeed no mean one, among many other advantages. Further than this, the husbandman would be better enabled to suit his several sorts of cattle to the different pastures in his possession, more to their benefit, and consequently his own. Even in marshy grounds, where it is a difficult undertaking to mend the soil, the growth of many plants might be encouraged, and the seeds of others sown, which are highly acceptable to different kinds of cattle. By degrees too we should undoubtedly be led to the cultivation of other vegetables besides *clover*, as fodder; and the foregoing observations imply, that this might be done in soils and situations where that would not thrive. Our hay would in consequence be much improved; for although cattle will eat those herbs among hay, which they reject while green and growing, yet it does not follow that all are in their dried state equally nutritive and wholesome. The benefits, in fine, which would arise from a diligent and general pursuit of these hints, would undoubtedly be various and extensive, and many more, in all probability,

lity, in a course of years, than can at present be thought of.

Agreeably to these ideas, a beginning has been made, under the auspices of our celebrated author, whose attempt was truly laudable, and worthy of himself. To this end, it is indeed certainly the province of the botanist to make the plants of his own country the principal objects of his attention. This has been eminently the case with LINNÆUS, and his country will continue to reap the fruit of his labours. The result of these experiments may be seen in a paper, called *PAN SUECUS*, printed in the second volume of the *Amanitates Academicæ*, the substance of which, so far as the experiments were made with plants common to this country, will be exhibited in the subsequent pages.

LINNÆUS conceived the first design of this institution from observations made in his *Dalekarlian* journey, which has been mentioned in the course of the preceding pages: he observed, that his horses left untouched, among other plants, *Meadow-sweet*, *Great Wild Valerian*, *Lilly of the Valley*, *Angelica*, *Rose-bay Willow Herb*, *Marsh Cinquefoil*, *Mountain Crowfoot*, *Crane's-bill*, *Globe Crowfoot*, and various shrubs. It was not till several years after, that these experiments were instituted; in which a number of his pupils were engaged; eight or nine of whom he mentions by name, and he had himself a large share in directing and conducting them. More than two thousand experiments were tried upon the *horned cattle*, *goats*, *sheep*, *horses*, and *hogs*: many were repeated ten, and some twenty times,

times, with the sole view of determining what vegetables these several animals would eat or reject. It is easy to see that numberless difficulties must arise in the prosecution of this scheme, and that imperfection, in a variety of instances, must at last attend their greatest accuracy. In the mean time, care was taken, as far as circumstances would admit, that the experiments were made as unexceptionably as possible; and it must be concluded, that the result upon the whole is true, as they have a real foundation in those unerring laws of instinct, to which nature has subjected the whole brute creation. The plants were all fresh gathered, not bruised in collecting, nor offered to the cattle when they were either almost famished, or glutted with variety; nor yet in the spring-time, when many of them greedily devour almost any vegetable they can get, sometimes such as are fatal to them, and which at other times they will not touch. The plants were also, in many examples, offered to several individuals of the same species.

These trials were made only with the indigenous plants of *Sweden*, which are (at least three fourths) the same as ours in *England*. The plants growing spontaneously in *Sweden*, exclusive of the mosses and funguses, amount to about 900 species. Of such a number, in every country, many must be very rare; it is not therefore to be expected that all these could be brought to trial. Some, although plentiful in one part of the country, would be very sparingly found in another. From the result it appeared, that the *horned cattle* eat of the plants which were offered to them, only 276 species, and

that

that they rejected 218. The *goats*, of 449 kinds, refusing 126. The *sheep*, of 387, refusing 141. The *horses*, of 262 species, refusing 212. And of those which were offered to *swine*, they eat 72 kinds, and refused 171.

The *Pan Suecus*, it may be presumed, is but in few hands, at least of such whom the subject most concerns. It is written in Latin, and put into the most compendious form imaginable, by inserting only the *trivial* names of the plants, and referring to the number in the *Flora Suecica*, where the synonyms are given. In this form it is almost useless to persons unacquainted with LINNÆUS's writings, and from an *English* reader is entirely hid. It appeared of importance enough to be thrown into an *English* dress, to which end it was necessary to give it a form different from the original.

So far as the trials were made with plants which are common to both countries, the result may be seen in the following pages, and they amount to no very inconsiderable number. Being taken *nearly* in the order in which they stood in the original paper, so the sexual system is of course preserved. Yet perhaps a more apt disposition of them might have been given, by arranging them according to their usual places of growth.

In order to render it more generally intelligible and acceptable, the *English* name of the plant is first given, then the *Linnean* generical and trivial name, by which it may instantly be found, either in LINNÆUS's own works, or in Mr. *Hudson's Flora Anglica*. To these follow three columns.

The first contains the reference to the page in Dr.

Hill's

Hill's British Herbal, which it may be presumed is in many hands, and which has now superseded, in a great measure, the *Herbals* of *Gerard* and *Parkinson*, being better accommodated to the purposes of botanic intelligence, and furnished also with figures. The second column refers to the page in *RAY's Synopsis of British Plants*, where the synonyms of the two *Bauhines*, and those of *Gerard* and *Parkinson*, are quoted. By this means the reader is very compendiously directed to a variety of authors on each plant. For the sake of those who wish to see an accurate figure, a reference to the *Flora Danica* is added, a work coming out at the expence of the King of *Denmark*, and intended to contain all the indigenous plants of that kingdom, of which 840 plates are already done. Of these above 500 are natives of this kingdom, on which account it supplies, so far, the want of a work of the same kind here. It must, however, be observed, that in this column, under the *Grasses*, those excellent tables in *Morison's Historia Plantarum Oxaniensis* are referred to. The columns on the other page contain the result of the experiments, for brevity's sake expressed as in the original, by numerical characters, which it will be necessary to illustrate. There is a column retained for every

* On this head it is much to be regretted, that these tables are not republished separately, with the history of the *Grasses* and *Grains* annexed; a work which, if executed by a proper hand, could not but be acceptable to all lovers of rural economy. This view might be rendered still more complete, by extending it to *all* those plants which are particularly the objects of this paper.

Species

species of animals with which the experiments were made in *Sweden*; for, although *goats* are not so commonly kept with us, as in that country, yet it will at least be matter of entertainment, if not of utility, to see what choice of vegetables they will make.

When this figure (1) is made use of, it denotes that the plant is eaten by that animal to which the column is appropriated; (O.) horned cattle or *Oxen*; (G.) *Goats*; (Sb.) *Sheep*; (H.) *Horses*; (S.) *Swine*. Two units, thus (11) denote that the animal is very fond of the plant. When the cypher (o) occurs, we are to understand that the plant is rejected by that animal. When both are found together in a column, thus (10), or (01), they denote that it was sometimes eaten and sometimes rejected: the former is supposed to signify, that it was generally eaten, but sometimes refused; the latter, the reverse. Where no figure occurs, it is to be understood that no opportunity had been taken of making a trial of that plant upon those animals. The native place of each plant is added, and the month in which it flowers, in as compendious a manner as possible, as this seemed to be a requisite addition; also its duration, whether annual (A.), biennial (B.), or perennial (P.). To the whole are collected and subjoined, from the last edition of the *Flora Suecica*, the *Flora Oeconomica*, RAY's *Historia Plantarum*, HALLER's *Enumeratio Stirpium Helvetiae*, and others, a few notes, pointing out particularly the noxious plants, or directing the reader's observation to any other article that seemed worthy of regard.

TABLES

TABLES of the PAN SUECUS,

	Hill.	Ray.	Flora Dan.
MONANDROUS PLANTS.			
1. JOINTED Glaswort. <i>Salicornia Europæa</i> . A. — } 482.3. 136.1. 403.			
2. Mare's Tail: Paddow Pipe. <i>Hippuris vulgaris</i> . P. — } 481.1. 136. 37.			
DIANDROUS PLANTS.			
3. Privet Bush. <i>Ligustrum vulgare</i> — 519. 465.			
4. Inchanter's Nightshade. <i>Circea lutetiana</i> . P. — 138. 289. 210.			
5. Male Speedwell. <i>Veronica officinalis</i> . P. — 91.2. 281. 248.			
6. Wild Germander. <i>V. Chamædrys</i> . P. — 91.3. 281. 448.			
7. Germander Speedwell. <i>V. agrestis</i> . A. — 92.6. 279.4. 449.			
8. Ivy-leaved Speedwell. <i>V. hederifolia</i> . A. — 92.5. 280.7. 428.			
9. Common Brooklime. <i>V. Becabungæ</i> . P. — 95.1. 280.8. 511.			
10. Long-leaved Brooklime. <i>V. Anagallis aquat.</i> P. — 95.2. 280.9. 109.			
11. Narrow-leaved Brooklime. <i>V. scutellata</i> . P. — 95.3. 280.10. 93.			
12. Butter wort, Yorkshire Sanicle. <i>Pinguicula vulgaris</i> . P. — } 107.1. 281.1. 628.			
13. Vervain. <i>Verbena officinalis</i> . P. — 356. 236. 666.			
14. Water Horehound. <i>Lycopus Europæus</i> . P. — 355. 236. 666.			
15. Vernal Grass. <i>Anthoxanthum odoratum</i> . P. — 499. 398. 666.			
TRIANDROUS PLANTS.			
16. Great wild Valerian. <i>Valeriana officinalis</i> . P. — 340.1. 200.1. 570.			
17. Marsh Valerian. <i>V. dioica</i> . P. — 340.3. 200.3.4. 487.			
18. Lambs Lettuce: Corn Sallet. <i>V. Locusta</i> . A. — 342.1. 201.1. 738.			
19. Flag-flower: Yellow Flower-de-luce. <i>Iris Pseud Acorns</i> . P. — } 472.1. 374. 494.			
*20. Stinking Gladwyn. <i>I. fatidissima</i> . P. — 473.3. 375.3. 494.			
GRASSES.			
*20 Long-rooted Bastard Cyperus. <i>Sclenus Mariscus</i> . P. — } 504.1. 426.4. 11.15.			
10. Millet Cyperus Grass. <i>Scirpus Sylvaticus</i> . P. — 504.5. 426.5. 10.1.			
21. Bull Rush. <i>S. lacustris</i> . P. — 504.1. 428.1. 10.32.			
22. Club Rush, or Aglet-headed Rush. <i>S. palustris</i> — 504.6. 429.7. 9.1.			
23. Cotton Grass. <i>Eriophoron polystachion</i> . P. — 506. 435. 7.8.			
24. Mat Grass. <i>Nardus stricta</i> . P. — 497.1. 393.2. 6.41.			
25. Reed Canary Grass: Great Reed Grass, with chaffy heads. <i>Phalaris arundinacea</i> . A. — 500. 400.1. 6.41.			

5. Male Speedwell. Gunner, in the *Flora Norwegica*, says this species is more particularly acceptable to sheep. The same author observes, that all the animals on whom these experiments were tried, greedily eat the *Paul's Betony*: *Veronica serpyllifolia*, which is not uncommon on our dry pastures.

12. Butter-wort, or Yorkshire Sanicle. Wherever this plant is found, it is a certain indication of a boggy soil. It has long had the reputation of being noxious to sheep, among our country people, who believe it gives them the rot, whenever they eat it, which they will not, but from great necessity: they hence called this plant *White Rot*.

15. Vernal Grass. Fine hay owes much of its grateful odour to the abundance of this grass amongst it. *Scheuchz.* It is one of the first flowering grasses, in the spring, and is very common in our fertile pastures.

19. Flag-flower. This ever remains untouched by all these animals except goats, though every herb around it be consumed to the ground. *Lin.* The same observation we have

accommodated to the ENGLISH Plants.

	O.	G.	Sh.	H.	S.	
1.	o		o	o	1	In salt marshes, common. 8, 9.
2.	o	1	o	o	o	In standing waters and ponds. 5.
3.	1	1	1	o		In hedges and woods. 5.
4.			1			In woods and thickets. 6, 7.
5.	1	1	1	1		In dry pastures and woods. 5.
6.	1	1	1			In meadows and pastures, very common. 4—6.
7.	1	1	1	1		In dry pastures, common. 5—8.
8.	1	1	1	1		In corn fields and fallow ground. 4—6.
9.	1	1		1	o	In shallow waters, common. 6, 7.
10.	1	1	1	o	o	With the foregoing. 7, 8.
11.	1	1	1	1		In watery places, not common. 6.
12.	o	o	o	o		On bogs, especially in the North. 5, 6.
13.	o	o	1	o		By way sides, and waste places. 6, 7.
14.	o	1	1	o		By ditches and brooks, common. 7.
15.	1	1	1	1		In meadows and pastures every where. 5.
16.	o	1	1	o	o	In woods, hedges, and by waters. 6.
17.		1	1			In moist and boggy meadows. 7.
18.		1	1			Amongst corn, and on corn grounds. 4, 5.
19.	o	1	o	o	o	In watery places. 7.
*20.	o		o	o		Under hedges and bushes, in the South. 7.
**20.						On bogs, and in salt marshes. 7, 8.
20.	1	1	1	1	o	By rivers and brooks. 7.
21.	o	1	o		1	In waters. 7, 8.
22.	o	1	o	1	1	In brooks and watery grounds. 7.
23.	o	1	1	o	o	On bogs. 6—8.
24.	10	1	1	1	o	On dry pastures and heaths. 6, 7.
25.	1	1	1	1	o	By waters, very common. 7.

have made relating to the *Stinking Gladwyn*, which is not uncommon in lanes, and under hedges, in the West of England.

*20. *Bastard Cyperus*. This plant is said to be very noxious, and even fatal to cows that eat it. *Gunner*.

21. *Bull Rush*. The peasants of *Sweden*, in defect of hay, fodder their cows with Bull Rushes.

22. *Club Rush*. Swine are extremely fond of the roots of this kind of Rush, and seek it with great avidity; and the peasants of *Sweden* stock themselves with these roots for winter food for these animals.

23. *Cotton Grass*. Both horses and cows will eat this plant in its young state, before it throws out the Cotton. *Gunner*.

25. *Reed Canary Grass*. Cows are very fond of this grass, and the peasants in the southern provinces of *Sweden* are sensible of it, and mow two crops in a year for their use. *Fl. Suec.*

	Hin.	Ray.	Morif. Hift. § 8.
*26. Cat's-tail Grass: Timothy-Grass. <i>Pbleum</i> } <i>pratense</i> . B. ——— }		398.1.2.	4.1.
26. Meadow Fox-tail Grass. <i>Alopecurus pratensis</i> . P. ———	498.	396.1.	4.8.
27. Flote Fox-tail Grass. <i>A. geniculatus</i> . P. ———	498.	396.2.	4.15.
*27. Rough Cocks-foot Grass. <i>Dactylis glomerata</i> . P. ———	502.33.	400.2.	5.38.
28. Millet Grass. <i>Milium effusum</i> . A. ———	500.	402.1.	5.10.
29. Melic Grass. <i>Melica nutans</i> . P. ———	500.6.	403.6.	7.49.
30. Silky, or Corn Bent Grass. <i>Agrostis Spica Ventii</i> . A. ———	500.4.	405.17.	5.1.
31. Brown Bent Grass. <i>A. conina</i> . P. ———			
32. Red Beat Grass. <i>A. rubra</i> . (nunc <i>Milium len-</i> } <i>digerum</i>) A. ——— }		394.4.	
33. Creeping Bent Grass. <i>A. flomifera</i> . P. ———		402.2.	
34. Fine Bent Grass. <i>A. capillaris</i> . P. ———		404.9.10.	
35. Turfy Hair Grass. <i>Aira cespitosa</i> . P. ———		402.4.	
36. Mountain Hair Grass. <i>A. flexuosa</i> . P. ———		403.5.	
37. Water Hair Grass. <i>A. aquatica</i> . P. ———	500.2.	407.8.9.	7.9.
38. Purple Hair Grass. <i>A. carulea</i> , (nunc <i>Melica</i> } <i>carulea</i>) P. ——— }		402.3.	
39. Meadow Soft Grass. <i>Holcus lanatus</i> . P. ———		404.8.	5.22.
40. Creeping Soft Grass. <i>H. mollis</i> . P. ———		404.14.	
41. Reed Meadow Grass. <i>Poa aquatica</i> . P. ———	501.24.	404.15.	
42. Creeping Meadow Grass. <i>P. compressa</i> . A. ———		411.13.	6.25.
43. Suffolk Grass: Annual Meadow Grass. <i>Annua</i> . A. ———	501.	09.5.	
44. Great Meadow Grass. <i>Poa pratensis</i> . P. ———		08.1.	5.21.
45. Common Meadow Grass. <i>P. trivialis</i> . P. ———		409.3.	5.18.
46. Narrow-leaved Meadow Grass. <i>P. angustifolia</i> . A. ———		409.2.	
47. Quaking Grass. <i>Briza media</i> . P. ———	502.	409.4.	5.19.
48. Crested Dog-tail Grass. <i>Cynofurus cristatus</i> . P. ———	499.	412.1.	6.45.
49. Blue Dog-tail Grass. <i>C. caruleus</i> . P. ———	499.	398.2.	
50. Field Brome Grass. <i>Bromus mollis</i> . A. ———	501.	499.4.	
51. Corn Brome Grass. <i>B. arvensis</i> . P. ———		413.5.	7.18.
*51. Wall Brome Grass. <i>B. tectorum</i> . A. ———		414.8.	7.16.
52. Spiked Brome Grass. <i>B. pinnatus</i> . P. ———		413.2.	7.13.
53. Barren Brome Grass. <i>B. sterilis</i> . A. ———		392.	5.4.
54. Sheep's Fescue Grass. <i>Festuca ovina</i> . P. ———	501.	412.1.	7.11.
55. Hard and Purple Fescue Grass. <i>F. rubra</i> . P. ———	501.	410.9.	3.13.
56. Small Fescue Grass. <i>F. decumbens</i> . P. ———	501.	413.4.	
57. Tall Meadow Fescue Grass. <i>F. elatior</i> . P. ———	501.	408.11.	1.6.
58. Flote Fescue Grass. <i>F. fluitans</i> . P. ———	501.	411.15.16.	2.15.
59. Meadow Oat Grass. <i>Avena pratensis</i> . P. ———	501.	412.17.	3.16.
		405.1.2.	

*26. Notwithstanding the character this grass acquired from *Le Roque's* recommendation, sheep dislike it, neither are cows or horses fond of it.

26. *Meadow Fox-tail Grass*. This is amongst the most grateful of all grasses to cattle.

40. *Creeping Soft Grass*. This is one of the grasses strongly recommended for culture by *M. Schreber*, Professor of Economy at *Erlang*; in his book on this subject, he says it is peculiarly grateful to cattle, and particularly to sheep.

41. *Red Meadow Grass*. *Linnaeus* strenuously recommends the culture of this grass, which is common by our river sides, as a most excellent food, and what horses, cows, and sheep, are exceedingly fond of.

43—45. *Meadow Grasses*. Amongst that variety of grasses with which our country abounds, these are the most frequent in all those pastures that we call fertile and good: there are scarcely any pastures that do not also contain a variety of other grasses, many of which are equally acceptable to cattle.

54. *Sheep's Fescue Grass*. Of all others this grass is the peculiar delight of the sheep, and they will select it with the greatest care.—*Eodem desituti colles aut ericata nec ovibus grata*

	O.	G.	Sh.	H.	S.	
26.	1	1				In pastures, and on the borders of fields. 7.
26.	10	1	1	1	10	In meadows and pastures every where. 5.
27.	1	1	1	1		In watery places, very common. 6—8.
27.	0	1	1	1		In meadows and pastures every where. 6—8.
28.	1	1	1			In woods and thickets. 6, 7.
29.	1	1		1		In woods and dry pastures. 6, 7.
30.		1	0	1		In corn fields, among standing corn. 7.
31.		0		1		In low pastures, common. 7, 8.
32.		0	1	1		In low pastures, not common. 7.
33.	1		1	1		In meadows and about thickets. 8.
34.	1	1		1		On hilly pastures every where. 8.
35.	1	1	1	10	1	In woods, pastures, in moist places. 7, 8.
36.	1	1	1	1		On dry pastures. 7, 8.
37.	1		1	1		In marshy wet grounds, not common. 6, 7.
38.		1	1	1		On bogs, heaths, and marshes. 8.
39.	1	1	1	1		In meadows and pastures every where. 6, 7.
40.	1	1	1	1		In woods and hedges. 7.
41.	1	1	1	1		About waters, common. 7, 8.
42.	1	1	1	1		In dry places, and on walls. 6.
43.	1	1	1	1	1	In meadows and pastures every where. 5—9.
44.	1	1	1	1	1	With the foregoing. 6, 7.
45.	1	1	1	1	1	With the foregoing. 6, 8.
46.	1	1	1	1	1	In hedges and woods. 7.
47.	1	1	1	1		In meadows and pastures every where. 6.
48.	1		1	1		In pastures every where. 8.
49.		1	1	1	0	In mountainous pastures, not common. 7.
50.	1	1	1	1		In meadows and pastures every where. 5, 6.
51.	1	1	1	1		On the borders of fields. 7.
51.	1	1	1	1		On dry pastures, not common. 5.
52.	1	1	1	1		On dry pastures. 6.
53.	1	1	1	1		About hedges, very common. 6, 7.
54.	1	1	1	1		On hilly and mountainous pastures. 6, 7.
55.		1		1		On dry pastures, common. 6.
56.						On barren moist pastures, near the sea. 8.
57.	1	1	1	1		In meadows and pastures, not uncommon. 7.
58.	0	1	1	1	1	In ditches and watery places every where. 6, 7.
59.	1	1	1	1		On heaths, dry meadows, and pastures. 7.

grata erant.—This is not the observation of *Linnaeus* alone: *Gmelin* has confirmed it; he tells us, that the *Tartars*, who live a migratory life, tending their flocks and herds, always in the summer-time choose places where this grass abounds, on account of its acceptableness, especially to the sheep. It is found on dry mountainous pastures in most parts of *Europe*, and in *England* is common on downs and uplands. The superiority of our wool in some parts of *England* may possibly be owing to a particular food which the sheep meet with in different places; and it might be worth enquiry, whether this grass may not have a great share in producing this effect. In general, we know that wool to be the finest which is bred on high pastures; but all such pastures are not equal in this respect. Until a better reason be assigned for this difference, may it not be ascribed to the difference of their food?

57. *Tall Meadow Fescue Grass.* Wherever this grass is found, it indicates the best of soil, and it is among the most acceptable of all to cattle. Its culture is much enforced by *Schreber*.

	Hill.	Ray.	Morif. Hill. § 8.
60. Bearded Oat Grass: Haver. <i>Avena sativa</i> . P. —	—	389.	7.5.
61. Tall Oat Grass. <i>A. elatior</i> . P. —	501.	406.4.	7.38. } 8.37. }
62. Yellow Oat Grass. <i>A. flavescens</i> . P. —	—	407.5.	7.42.
63. Common Reed. <i>Arundo phragmites</i> . P. —	500.	401.1.	8.1.
64. Branched Reed Grass. <i>A. Calamagrostis</i> . P. —	—	401.2.	8.2.
65. Corn Darnel. <i>Lolium temulentum</i> . A. —	—	395.1.	2.1.
66. Perennial Darnel Ray Grass. <i>L. perenne</i> . P. —	—	395.2.	2.2.
67. Dog's Grass, Couch Grass, or Wheat Grass. } <i>Triticum repens</i> . P. — }	—	399.1.	1.8.
68. Sea Lyme Grass. <i>Elymus arenarius</i> . P. —	—	390.3.	—
69. Water Chickweed. <i>Montia palustris</i> . A. —	181.16.	352.	131.
70. Wall Barley. <i>Hordeum murinum</i> . A. —	—	391.1.2.	2.6.

TETRANDROUS PLANTS.

			Flor. Dan.
71. Field Scabious. <i>Scabiosa arvensis</i> . P. —	464.1.	191.1.	447.
72. Lesser Field Scabious. <i>S. columbaria</i> . P. —	464.2.	191.2.	334.
73. Devil's Bit. <i>S. succisa</i> . P. —	464.3.	191.3.	279.
74. Little Field Madder. <i>Sherardia arvensis</i> . P. —	396.	225.	439.
75. Woodroof. <i>Asperula odorata</i> . P. —	398.	224.	562.
76. Squinancy-Wort. <i>A. cynanchica</i> . P. —	399.	225.	—
77. Ladies Bed-Straw. <i>Galium verum</i> . P. —	397.	224.	—
78. Great Bastard Madder. <i>G. Mollugo</i> . P. —	397.1.	223.1.	455.
79. Crosswort Madder. <i>G. boreale</i> . P. —	397.2.	224.3.	—
80. Crosswort; Mugweed. <i>Valantia Cruciata</i> . P. —	396.	223.	—
81. Goose Grass: Clivers. <i>Galium Aparine</i> . A. —	398.	225.1.	495.
82. Great Plantain. <i>Plantago major</i> . A. —	152.1.	314.1.	461.
83. Hoary Plantain. <i>P. media</i> . P. —	153.2.	314.3.	581.
84. Ribwort Plantain. <i>P. lanceolata</i> . P. —	153.3.	314.5.	437.
85. Buck's-horn Plantain. <i>P. Coronopus</i> . A. —	153.6.	315.8.	278.
86. Sea Plantain. <i>P. maritima</i> . P. —	153.5.	315.7.	243.
87. Burnet. <i>Sanguisorba officinalis</i> . P. —	346.	203.2.	97.
88. Dogberry Tree. <i>Cornus sanguinea</i> . —	517.	400.	481.
89. Ladies Mantle. <i>Alchemilla vulgaris</i> . P. —	492.	158.1.	698.
90. Cinquefoil Ladies Mantle. <i>A. alpina</i> . P. —	492.	158.2.	49.
91. Broad-leaved Pondweed. <i>Potamogeton natans</i> . P. —	488.	148.1.	—
92. Perfoliated Pondweed. <i>P. perfoliatum</i> . P. —	488.	149.4.	196.
93. Long-leaved Pondweed. <i>P. lucens</i> . P. —	489.	148.2.	195.
94. Pearl Wort. <i>Sagina procumbens</i> . A. —	226.2.	345.2.	—

PENTANDROUS PLANTS.

95. Mouse-ear Scorpion Grass. <i>Myosotis scorpi-</i> }	391.	229.1.	583.
<i>oides. a.</i> P. — }	—	—	—
96. Water Scorpion Grass. <i>M. palustris. b.</i> —	391.	229.4.	—
97. Gromwell. <i>Lithospermum officinale</i> . P. —	390.	228.	—
98. Bastard Alkanet. <i>L. arvense</i> . A. —	387.	227.3.	456.
99. Hound's-tongue. <i>Cynoglossum vulgare</i> . P. —	386.	226.1.	—

64. Branched Reed Grass. Cows will sometimes eat this grass, but it is hurtful to them on account of its purging quality.

67. Couch Grass is to be found in great plenty in some parts of Europe in the corn-fields, even to the obstruction of the plough. Gunner says he has seen horses and horned cattle, accustomed to it, eat the roots with avidity; and that they are collected for this purpose by the husbandmen.

88. Ladies Mantle. Dr. Haller, in his *Her Helveticum*, tells us, that the astonishing

richness of the color of the flowers of this plant is common in the mountains of the Alps, and is particularly remarkable in the mountains of the Jura.

	O.	G.	Sh.	H.	S.	
60.			1	1	1	In corn fields, not very common. 8.
61.	1	1	1			About hedges and bushes every where. 7.
62.	1		1	1		In pastures every where. 7.
63.	1	1	0	1	0	In rivers and lakes, common. 7.
64.	1	1				About hedges, &c. in moist places about woods. 6, 7.
65.			10			Among the corn. 7, 8.
66.	1	10		1		In pastures, and by the way sides. 6.
67.	1	1	1	1	0	In fields, and about hedges. 6—8.
68.	1	1	0	1		On the sea coast, not common. 5, 6.
69.	0		0	0	0	About springs and brooks. 4.
70.	1		1	1		In meadows, and by way sides. 4—8.
71.	10	1	1	1	0	About corn fields, common. 8.
72.		1	1	1		In dry pastures, common. 6, 7.
73.	1	1	1	1	0	In meadows and pastures, common. 6—8.
74.	0	1	0	1		On plowed or fallow lands. 7, 8.
75.	1	1	1	1		In woods. 5.
76.	1	1	1	1	0	On upland chalky grounds. 7, 8.
77.	10	1	1	1	0	In meadows, and the borders of fields. 7.
78.	1	1	1	1	1	In hedges, very common. 6, 7.
79.	10	1	1	1	0	On upland pastures in the North. 6—8.
80.	1	0	1	1	0	In pastures, and about hedges and bushes. 5, 6.
81.	1	1	1	1	0	About hedges, very common. 5—8.
82.	0	1	1	1	0	By way sides every where; in pastures. 6, 7.
83.	0	1	1	1	0	With the foregoing. 7, 8.
84.	0	1	1	1	1	In meadows and pastures every where. 6, 8.
85.			1	1		In gravelly ground, and on the sea coast. 7, 8.
86.	10	1	1			In sea marshes. 6, 7.
87.	1	1	1	1		In pastures, common. 6, 7.
88.	0	1	1	1		In woods and hedges. 6.
89.	10	1	1	1	0	In upland pastures and meads. 6, 8.
90.	1	1	0	0	0	In mountainous grounds, not common.
91.	1	1	0	0	0	In waters, common. 8.
92.	0	0	0	0	0	In rivers, frequent. 6, 7.
93.	0		0		0	In rivers and standing waters. 6.
94.			1			On sandy pastures. 6.
95.	0	0	0	0	0	In dry pastures. 4—8.
96.	0	1	0		0	About brooks, springs, and ditches. 4—8.
97.	0	1			0	By the road sides: dry pastures. 5, 6.
98.	10	1	1	0	0	In corn fields. 5, 6.
99.	0	1	0		0	In lanes, and by road sides. 6.

richness of the milk in the famous dairies of the Alps, described by Scheuchzer, is attributed entirely to the plenty of this plant, and that of the Ribwort Plantain.

95. *Moose-ear Scorpion Grass*. Constantly refused by all these animals.

96. *Water Scorpion Grass*. This is considered as only a variety of the former, owing to its place of growth, which renders the plant larger in all its parts, and destroys the hairiness of its leaves. It is common in watery places, and the sheep will sometimes eat it, in which case it is frequently fatal to them, as Linnaeus discovered in his *Ilex Gotlandicum*.

	Hill.	Ray.	Flor. Dan.
100. Comfrey. <i>Symphytum majus</i> . P. —	392.	230.	664.
101. Small wild Bugloss. <i>Lycopsis arvensis</i> . A. —	387.1.	227.	435.
102. Viper's Bugloss. <i>Echium vulgare</i> . P. —	388.1.	227.	445?
103. Primrose and Cowslip. <i>Primula vulgaris</i> . P. —	69.1.	284.	194. & } 434.
104. Bird's Eye. <i>P. farinosa</i> . P. —	59.3.	285.	125.
105. Buck-bean. <i>Menyanthes trifoliata</i> . P. —	77.	285.	541.
106. Water Violet. <i>Hottonia palustris</i> . P. —	78.	285.	487.
107. Water Pimpernel. <i>Samolus Valerandi</i> . P. —	56.	283.	198.
108. Yellow Willow Herb. <i>Lythymachia vulgaris</i> . P. —	54.	282.	689.
109. Money Wort. <i>L. Nummularia</i> . P. —	65.	283.	493.
110. Red Pimpernel. <i>Anagallis arvensis</i> . A. —	67.	282.1.	88.
111. Small Bindweed. <i>Convolvulus arvensis</i> . —	57.2.	275.2.	459.
112. Great Bindweed. <i>C. sepium</i> . P. —	57.1.	275.1.	458.
113. Round-leaved Bell Flower. <i>Campanula rotundifolia</i> . P. —	70.1.	277.5.	189.
114. Giant Throatwort. <i>C. latifolia</i> . P. —	74.1.	276.1.	85.
115. Great Throatwort. <i>C. Trachelium</i> . P. —	74.2.	276.2.	
116. Henbane. <i>Hyoscyamus niger</i> . A. —	55.	274.	
117. Great White Mullein. <i>Verbascum Thapsus</i> . B. —	56.	287.1.	631.
118. Black Mullein. <i>V. nigrum</i> . P. —	38.4.	288.4.	
119. White-flowered Mullein. <i>V. Lychnitis</i> . B. —	38.3.	287.3.	586.
120. Common Nightshade. <i>Solanum nigrum</i> . A. —	326.3.	265.4.	460.
121. Woody Nightshade. <i>S. Dulcamara</i> . P. —	326.1.	265.1.	607.
122. Ivy. <i>Hedera Helix</i> . —	516.	459.	
123. Honeyfuckle. <i>Lonicera Caprifolium</i> . —	516.	458.	
124. Buckthorn. <i>Rhamnus Catharticus</i> . —	520.	466.	
125. Black Berry-bearing Alder. <i>R. Frangula</i> . —	520.	465.	278.
126. Spindle Tree. <i>Euonymus Europæus</i> . —	521.	468.	
127. Gooseberry Bush. <i>Ribes Grossularia</i> . —			
128. Red Currants. <i>R. rubrum</i> . —	515.	456.1.	
129. Sweet Currants. <i>R. alpinum</i> . —		456.2.	
130. Sea Milkwort. <i>Glaux maritima</i> . P. —	78.	285.	548.
131. Autumnal Gentian. <i>Gentiana Amarella</i> . A. —	51.2.	275.	328.
132. Centory. <i>G. Centaurium</i> . A. —	62.1.	286.	617.
133. Dodder. <i>Cuscuta Europæa</i> . A. —	83.	281.	199. & } 427.
134. Prickly Glasswort. <i>Salsola Kali</i> . A. —		159.	818.
135. Common English Mercury. <i>Chenopodium Bonus Henricus</i> . P. —	490.	156.	579.
136. Goosefoot, or Sowbane. <i>C. murale</i> . A. —	490.	154.2.	
137. Common Orach. <i>C. album</i> . A. —	490.	154.1.	
138. Maple-leaved Blite. <i>C. hybridum</i> . A. —	490.	154.5.	
139. Stinking Orach. <i>C. olida</i> . A. —	490.2.	156.13.	
140. Round-leaved Blite. <i>C. polyspermum</i> . A. —	490.9.	157.18.	
141. Common Elm. <i>Ulmus campestris</i> . —	522.	468.	632.
142. Marsh Pennywort. <i>Hydrocotyle vulgaris</i> . P. —	419.	222.	90.

139. *White Mullein*, called also *Cow's Lung-wort*, from the great reputation it had formerly with our country people for inveterate coughs among the horned cattle. *Parkinson* tells us it was used in his time, in such cases, with great success, and it yet retains the same credit in some parts of Europe. *Gunner. Loefl.*

140. *Black Berry-bearing Alder*. The bark of this tree is said to be the most certain purge for the horned cattle in obstinate constipations of the bowels. *Lin.* *Gunner* says, horses do not eat the leaves, but that cows sometimes will, and that it greatly increases the milk.

141. *English Mercury*. Common about farm-yards. The country people give the root

Flora	O.	G.	Sh.	H.	S.	
100.	1	0	1	0	0	In moist places and by river sides. 5—8.
101.	1	1	1	1	0	In corn fields and fallow land. 6—9.
102.	1	0	1	0	0	On fallow ground, and by way sides. 7, 8.
103.	0	1	1	0	0	In hedges and pastures. 3—5.
104.	0	1	1	1	0	On boggy mountains in the North. 5.
105.	0	1	10	0	0	In watery pits and bogs. 6, 7.
106.	1	1	1	0	0	In ditches, bogs, and marshes. 7, 8.
107.	1	1	1	0	0	In moist meadows and marshes near the sea. 6.
108.	1	1	10	0	0	By waters. 6, 7.
109.	1	10	1	0	0	In wet meadows, and about ditches. 6.
110.	1	1	0	0	0	In corn fields, and on sandy places. 5—8.
111.	1	1	1	1	0	In corn fields every where. 6, 7.
112.	0	1	1	1	0	In hedges, especially in moist places. 7, 8.
113.	1	1	1	1	0	On dry barren pastures, and on heaths. 2.
114.		1	1	1	0	In bushes and hedges, not common. 8.
115.	1	0			0	In woods and hedges. 7, 8.
116.	0	0	0	0	0	In waste places, farm yards, about villages. 6.
117.	0	0	0	0	0	By way sides, in lanes. 7.
118.	0	0	10	0	0	By way sides, not very common. 7.
119.	0	0	0	0	0	In sandy and chalky soil, not common. 7.
120.	0	0	0	0	0	About dunghills, common. 6, 7.
121.	0	1	1	0	0	In wet hedges, and woods. 6, 7.
122.	0	0	1	1	0	In hedges, and woods and thickets. 9, 10.
123.	1	1	1	0	0	In hedges and woods. 5, 7.
124.	0	1	1	1	0	In woods, and hedges and thickets. 4, 5.
125.	0	1	1		0	In woods, &c. 4, 5.
126.	1	1	1	0	0	In woods and hedges. 4, 5.
127.	0	1	10	1	0	In hedges. 5.
128.	1	1	1	10	0	In woods and hedges. 5.
129.	1	1	1	1	0	In hedges in the North, not common.
130.	1				0	On the coast, in salt marshes. 7.
131.			1	0	0	On upland pastures. 7, 8.
132.	10				0	With the foregoing. 6—8.
133.	1	0	1	0	1	On heaths, among corn. 7.
134.	0	0	0	0	0	On the sea coast. 7, 8.
135.	1	10	10	0	0	In farm yards, and waste places, common. 8.
136.	1	1	1	0	1	About dunghills and manured spots. 8.
137.	1	1	1	0	1	In cultivated places, and among corn. 8.
138.		1	1	0	1	In waste places and cultivated spots. 8.
139.	1	1	1	1	0	In like places with the foregoing. 8.
140.	1	0	1	0	0	In waste places, and on dunghills. 8.
141.	1	1	1	1	1	In hedges, &c. 4.
142.					0	On bogs and marshy grounds. 5.

to their sheep in obstinate coughs. *Lin.*

136. *Goosefoot, or Sowbane.* This has the character of being poisonous to swine; yet it appears that these animals will eat it. Almost all the old writers give it the character of a poisonous plant, and *John Baubine* particularly avers, that it is so to these animals; as do also some of the more modern writers.

142. *Marsh Pennywort.* It does not appear that any experiments were made with this plant. It is very common in marshy grounds with us, and our farmers are of opinion that it gives sheep the *rot*, and thence call it *White Rot*. In this light *Parkinson* mentions it.

	Hill	Ray	Flor. Dan.
143. Sanicle. <i>Sanicula Europea</i> . P.	419.	228.	283.
144. Wild Carrot. <i>Daucus Carota</i> . B.	415.	218.	723.
145. Hemlock. <i>Conium maculatum</i> . A.	411.	215.1.	724.
146. Cow Parsnip. <i>Heracleum Spondylium</i> . B.	401.	205.1.	725.
147. Wild Angelica. <i>Angelica sylvestris</i> . P.	405.	208.	726.
148. Great Water Parsnip. <i>Sium latifolium</i> . P.	408.	211.	245.
149. Water Dropwort. <i>Oenanthe fistulosa</i> . P.	407.	210.	727.
150. Hemlock Dropwort. <i>O. crocata</i> . P.	407.	210.	728.
151. Water Hemlock. <i>Phellandrium aquat.</i> B.	412.	215.	729.
152. Long-leaved Water Hemlock. <i>Cicuta virosa</i> .	409.	212.7.	208.
153. Fools Parsley. <i>Æthusa Cynapium</i> . A.	411.2.	215.2.	730.
154. Hemlock Chervil. <i>Scandix Autbriscus</i> . A.	416.7.	220.7.	731.
155. Wild Cicely, or Cow-weed. <i>Charophyllum</i> <i>flavefc.</i> A.	404.2.	207.	732.
156. Wild Chervil. <i>C. temulum</i> . A.	404.1.	207.	733.
157. Burnet Saxifrage. <i>Pimpinella Saxifraga</i> . P.	409.	213.	669.
158. Herb Gerard: Gout-weed. <i>Ægopodium Poda-</i> <i>graria</i> . P.	406.	208.	670.
159. Smallage. <i>Apium palustre</i> . B.	411.	214.	790.
160. Water Elder. <i>Viburnum Opulus</i> .	517.	460.	661.
161. Common Elder. <i>Sambucus nigra</i> .	518.	461.	545.
162. Dwarf Elder. <i>S. Ebulus</i> . P.	518.	461.	734.
163. Grass of Parnassus. <i>Parnassia palustris</i> . P.	192.	355.	584.
164. Thrift: Sea Gilliflower. <i>Statice Armeria</i> P.	345.	203.	735.
165. Sea Lavender. <i>S. Limonium</i> . P.	343.1.	201.	315.
166. Purging Flax. <i>Linum Catharticum</i> . A.	195.5.	362.	736.
*166. Sun-dew. <i>Drosera rotundifolia</i> . B.	187.	356.	737.
HEXANDROUS PLANTS.			
167. Ramson. <i>Allium ursinum</i> . P.	467.5.	370.5.	757.
168. Crow Garlick. <i>A. vineale</i> . P.	467.1.	369.1.	758.
169. Lancashire Aiphsodel. <i>Anthericum ossifragum</i> . P.	473.	375.	42.
170. Lilly of the Valley. <i>Convallaria majalis</i> .	322.	264.	759.
171. Wild Sparagus. <i>Asparagus officinalis</i> . P.	325.	267.	805.
172. Sweet-smelling Flag. <i>Acorus Calamus</i> . P.	507.	437.	760.
173. Common soft Rush. <i>Juncus effusus</i> . P.	505.	432.4.	761.
174. Common round-headed Rush. <i>J. conglomeratus</i> .	505.	432.5.	762.
175. Bulbosc Rush. <i>J. bulbosus</i> . P.	505.	434.11.	431.
176. Toad Grass. <i>J. bufonius</i> . A.	505.	434.12.	763.
177. Common hairy Wood Rush. <i>J. pilosus</i> . P.	502.	416.3.	441.
178. Small hairy Wood Rush. <i>J. campestris</i> . P.	502.	416.1.	764.
179. Barberry Bush. <i>Berberis vulgaris</i> .	520.	465.	765.
180. Water Dock. <i>Rumex aquaticus</i> . P.	485.	140.1.	766.

146. *Cow Parsnip.* The cows are known to be particularly fond of this plant; and Mr. Ray observes that the rabbits are no less so.

151. *Common Water Hemlock.* This plant is very common in England. It is a well-known fact in Sweden, that horses will eat it, and that it frequently proves fatal to them by inducing a palsy; this effect, nevertheless, is judged to be owing to an insect, which inhabits in great plenty the stalks of this herb, and from this singular effect is called by LINNÆUS, *Curculio paralepticus*, when in its perfect state, as the *Larva* only exists in this vegetable. The same caterpillar is found in the *Water Parsnip* also in England.

152. *Long-leaved Water Hemlock*. Happily this plant is not very common in England: the roots are the most virulent vegetable poison that is indigenous here. LINNÆUS, in the *Flora Lapponica*, N° 103, gives a dreadful account of the havoc it frequently made among the horned cattle in *Lapland*, where it is common in the meadows near the sea, and where these cattle will frequently eat it, upon being first turned to graze in the spring, though they afterwards refuse it; yet they will eat the roots at all times, which are the most

	O.	G.	Sh.	H.	S.	
143.	10	1	0			In woods and hedges, common. 5, 6.
144.	1	1	1	1		In meadows and pastures, common. 6, 7.
145.	0	0	1	0		By hedges, and on the banks of ditches. 6, 7.
146.	1	1	1	10	1	About hedges, rivers, and in pastures. 7.
147.	1	1		0	1	In moist woods, in watery places. 6, 7.
148.	0	0	0	1	1	In rivers, ponds, and marshy places. 7, 8.
149.	0					In marshes, and in ditches, common. 7.
150.	0		1	0		By the sides of rivers and brooks. 6, 7.
151.	0	1	1	1	10	In rivers and ditches, common.
152.	0	1	1	1		On the banks of rivers and ponds, &c. 7—9.
153.	1	1	1	1	1	In corn fields, and on banks of ditches. 8.
154.	1	1	1			Hedges, waste places; among corn, every where. 5, 6.
155.	10	10	10	10	0	About hedges, very common: orchards. 5, 6.
156.						With the former, every where: orchards. 7, 8.
157.	1	1	1	1	1	On dry pastures. 8.
158.	1	1	1	10		In hedges, and often the pest of gardens. 6.
159.	10	1	1	0		About waters, especially near the sea. 8.
160.	1	1	1	0		In moist woods, and hedges. 5, 6.
161.	0	0	1	0		In moist hedges. 4.
162.	0	0	0	0	0	In hedges by way sides, in church yards. 7.
163.	0	1	10	1	0	In marshy meadows, not common. 8.
164.	0	1	1	1	0	In salt marshes, common. 7, 8.
165.		1	1			On the sea coast, and with the foregoing.
166.		1	1	1		On dry and upland pastures. 5, 6.
*166.			0	1		On bogs and heaths. 7, 8.
167.	1					In woods, hedges, and thickets. 5.
168.	1	1	1	1		In meadows and pastures. 5.
169.	1	0	1	0		On boggy grounds, not very frequent. 8.
170.	0	1	1	0	0	In woods, not common. 5.
171.	1	1	1	0	0	About the coast, and in salt marshes. 7.
172.	0	0	0	0	0	In rivers, scarce. 5.
173.	1			1		In and about waters. 5—8.
174.		1	0	1		Wet pastures, and woods.
175.	1	1	1	1		In moist marshes and heaths, common. 8.
176.				1		In gravelly soil, about standing waters. 7.
177.	0	1	1	1		In thick woods. 4, 5.
178.		1	1	1		In dry turfy meadows and pastures. 4.
179.	1	1	1	0	0	In woods and hedges. 5.
180.	0	0	1	0	0	In and about rivers and lakes. 7, 8.

most virulent parts of the plant. Bishop Gunner and Gmelin both confirm these bad effects. It is yet doubtful whether horses are hurt by it; and certain that goats are delighted with it, and eat it without any subsequent ill effect: and the roots are collected by the *Norwegian* peasants as fodder for those animals.

153. *Fools Parsley*. This is deleterious to the human race, although eaten by these quadrupeds.

*166. *Sun-dew*. Sun-dew is called by the country people *Red-rot*, on account of its destructive quality to sheep. Ray.

169. *Lancashire Asphodel*. This plant is also thought to be very noxious to sheep, whenever through poverty of pasture they are necessitated to eat it, although they are said to improve much in their flesh at first, and afterwards to die with the symptoms of a diseased liver. This is the plant of which such wonderful tales have been told by *Pauli*, *Bartholine*, and others, of its softening the bones of such animals as are it; and which they thence called *Gramen ossifragum*. Horned cattle eat it without any ill effect. Gunner.

		Hill.	Ray.	Flor. Dan.
181.	Curled Dock. <i>R. crispus</i> . P.	485.	141.3.	122.
182.	Common Sorrel. <i>R. acetosa</i> . P.	485.	143.	188.
183.	Sheeps Sorrel. <i>R. acetosella</i> . P.	485.	143.	
184.	Arrow-headed Grass. <i>Triglochin palustre</i> . P.	505.	435.	490.
185.	Sea spiked Grass. <i>T. maritimum</i> . P.	505.	435.	386.
186.	Water Plantain. <i>Alisma Plantago aquatica</i> . P.	22.	257.	561.

OCTANDROUS PLANTS.

187.	Rosebay Willow-herb. <i>Epilobium angustif.</i>	147.1.	310.	289.
188.	Hairy Willow-herb. <i>E. hirsutum</i> . P.	147.2.	311.	347.
189.	Smooth Willow-herb. <i>E. montanum</i> . B.	147.3.	311.4.	
190.	Common Heath, or Ling. <i>Erica vulgaris</i> .	523.	470.1.	677.
191.	Whorts: Whortle-berries. <i>Vaccinium Vitis</i> <i>Idæa</i> .	516.1.	457.3.	40.
192.	Black Whorts: Bilberries. <i>V. Myrtillus</i> .	516.3.	457.2.	
193.	Cranberries. <i>V. Oxycoccus</i> .	324.	267.	80.
194.	Golden Saxifrage. <i>Chrysosplenium</i> . P.	491.	158.	365.
195.	Perennial Arifmart. <i>Polygonum amphibium</i> .	487.	145.9.	282.
196.	Dead or spotted Arifmart. <i>P. Persicaria</i> . A.	487.	145.4.	702.
197.	Water Pepper. <i>P. Hydropiper</i> . A.	487.	144.1.	
198.	Knot Grass. <i>P. aviculare</i> . A.	487.	146.	803.
199.	Black Bindweed. <i>P. Helixine</i> . A.	486.	144.	744.
200.	Heib Paris, One Berry. <i>Paris quadrifolia</i> . P.	323.	264.	139.

ENNEANDROUS PLANTS.

201.	Flowering Rush. <i>Butomus umbellatus</i> . P.	35.	273.	604.
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DECANDROUS PLANTS.

202.	Winter Green. <i>Pyrola rotundifolia</i> . P.	85.1.	363.1.	110.
203.	Marsh Cistus. <i>Andromeda polifolia</i> . P.	523.	472.	54.
204.	Maiden Pink. <i>Dianthus deltoides</i> . P.	162.	335.	577.
205.	Knawel. <i>Scleranthus annuus</i> . A.	493.	159.	504.
206.	White Saxifrage. <i>Saxifraga granulata</i> . P.	189.	354.	514.
207.	Bottle Campion. <i>Cucubalus Behen</i> . P.	164.2.	337.2.	
208.	White and Red Campion. <i>Lychnis dioica</i> . P.	166.8.	339.9.	792.
209.	Chickweed. <i>Alfina media</i> . A.	179.1.	347.6.	525.
210.	Purple Spurrey. <i>Arenaria rubra</i> . A.	184.2.	351.9.	740.
211.	Corn Spurrey. <i>Spergula arvensis</i> . A.	184.1.	351.7.	
212.	Sea Chickweed. <i>Arenaria peploides</i> .	181.14.	351.12.	624.
212.	Moufe-ear Chickweed. <i>Cerastium viscosum</i> . A.	181.2.	348.3.	
213.	Marsh Moufe-ear Chickweed. <i>C. aquaticum</i> . P.	179.2.	347.4.	
214.	Cockle. <i>Agrostemma Githago</i> . A.	166.6.	338.5.	576.
215.	Meadow Pink. <i>Lychnis Flos Cuculi</i> . P.	165.4.	338.4.	590.
216.	Wood Sorrel. <i>Oxalis Acetosella</i> . P.	80.	281.	
217.	Orpine. <i>Sedum Telephium</i> . P.	36.1.	269.	686.
218.	Stone Crop; Wall Pepper. <i>S. acre</i> . P.	38.6.	270.5.	
219.	White-flowered Stone Crop. <i>S. album</i> . P.	38.3.	271.7.	66.

DODECANDROUS PLANTS.

219.	Sun Spurge. <i>Euphorbia Helioscopia</i> . A.	150.	313.	725.
220.	Purple spiked Loosestrife. <i>Lythrum Salicaria</i> . P.	218.1.	367.1.	671.

225. Sea spiked Grass. Cows are extremely fond of this grass; as indeed they are of many other maritime plants: and equally so of the foregoing species.

190. Common Heath, or Ling. The bees are thought to get more honey from Ling than from any other plants; but what is produced from it has a reddish cast, and is therefore not so much valued.

207. Bottle Campion. This plant is common with us on the borders of corn-fields, and

Gunn

	O.	G.	Sh.	H.	S.	
181.	o	o				In meadows, pastures, and by way sides. 6, 7.
182.	i	i	i	i	i	In meadows and pastures, common. 5, 6.
183.		i	i	i	i	On downs, uplands, fallow fields, &c.
184.	i	i	i	i	i	In moist and marshy meadows. 7, 8.
185.	ii	i	i	i	i	In salt marshes, common. 5, 6.
186.	o	i	o	i	o	In waters, plentifully. 6, 7.
187.	i	ii	i	o	o	In woods and hedges, in the North. 7, 8.
188.	io	i	i	i	o	In watery places, about rivers, &c. 7.
189.		i		io		In woods and wet places. 6.
190.	i	io	io	i	o	On barren mountainous ground. 6—9.
191.	i	i	i	i	o	On mountains and heaths, in the North. 4, 5.
192.	o	i	o	o		On heaths, and in woods. 4.
193.	o	i	o	o	i	On turfy boggy grounds, in the North. 5.
194.	io		o	o	o	In shady thick woods, and about springs. 4.
195.	o	i	i	i	i	In and about rivers and ditches. 6, 7.
196.	o	i	i	i	o	In meadows, waste places, corn fields, &c. 8, 9.
197.	o	o	o	o	o	In and about ditches and moist places. 7, 8.
198.	i	i	i	i	i	By the way sides, waste places, very common. 6, 9.
199.	i	i	o	o	o	Corn fields, gardens, manured places. 6—9.
200.	o	i	i	o	o	In shady woods and thickets. 5, 6.
201.	o	o	o	o	o	In waters. 6.
202.	o	i	o	o	o	In woods and groves, in the North. 6, 7.
203.	o	i	o	o	o	On bogs and wet turfy grounds, in the North. 4.
204.	i	i	i	i	o	On heaths and dry pastures, not common. 6, 7.
205.	o	i		i		In corn fields and gravelly grounds. 8.
206.	o	i	o	o	o	In dry meadows and pastures. 5, 6.
207.	i	i	i	i	o	On fallow lands, and among corn. 7.
208.	i	i	i	i	i	In woods, and about hedges, every where. 5—7.
209.	i	o	io	i	i	Every where in moist and shady places.
210.		i	i			Dry sandy grounds, and on the sea coasts. 6, 7.
211.	io	o	i	i	i	Among corn, and on fallow ground. 8.
212.	i		i	i		On the sea coast. 6, 7.
*212.	o	i	o	i		In meadows and pastures, very common. 5.
213.			i	i	i	In moist places about ditches and rivers. 7.
214.		i	i	i		Among the corn, very common. 6.
215.		i	i	i		In moist meadows and pastures. 6.
216.	oi	i	i	o	i	In woods, and under shady hedges. 4.
217.	i	i	i	o	i	About hedges, old walls, and in pastures. 8.
218.	o	i	o	o	o	On walls, on rocks and mountains. 6.
219.		i	o			On walls, thatch, &c. not common. 6, 7.
*219.	o	oi	oi	i		In kitchen gardens, and sometimes in corn fields. 7.
220.	i	i	i	i	o	By the banks of rivers and lakes. 7.

Gunner says it is among the most acceptable herbs to cows. Its cultivation has on this account been recommended in foreign publications.

208. *White and Red Campion*. The same author relates that this plant is thought by some of the peasants in *Norway* to cause staling of blood in the horned cattle.

211. *Corn Spurrey*. This plant has been cultivated as food for cattle, and is thought by some writers on agriculture to deserve more notice than has hitherto been paid to it.

*220. *Dyer's*

	Hill.	Ray.	Flor. Dan.
*220. Dyer's Weed. <i>Refeda Luteola</i> . A. —	208.	366.	
221. Agrimony. <i>Agrimonia Eupatoria</i> . P. —	345.	202.	588.
ICOSANDROUS PLANTS.			
222. Black-thorn. <i>Prunus spinosa</i> . —	518.	462.	
223. Bird's Cherry. <i>P. Padus</i> . —	518.	463.	205.
224. Wild Service Tree. <i>Crataegus torminalis</i> . —	514.	453.	798.
225. Haw-thorn. <i>C. Oxyacantha</i> . —	515.	453.	634.
226. Quicken-tree: Mountain Ash. <i>Sorbus aucuparia</i> . —	514.	452.	
227. Wild Pear Tree. <i>Pyrus communis</i> . —	514.	452.	
228. Crab Tree. <i>P. Malus</i> . —	514.	452.	
229. Dropwort. <i>Spiraea Filipendula</i> . P. —	24.	259.	635.
230. Meadow Sweet. <i>S. Ulmaria</i> . 7. —	23.	259.	547.
231. Common Briar, or Dog Rose. <i>Rosa Canina</i> . —	515.	454.	555.
232. Burnet Rose. <i>R. spinosissima</i> . —	515.	455.	398.
233. Raspberry Bush. <i>Rubus Idaeus</i> . —	521.	467.4.	788.
234. Common Bramble. <i>R. fruticosus</i> . —	521.	467.1.	
235. Dewberry Bush. <i>R. casius</i> . —	521.	467.3.	
236. The Wood Strawberry. <i>Fragaria vesca</i> . P. —	2.	254.1.	
237. Silver Weed. <i>Potentilla Argentina</i> . P. —	6.	256.	544.
238. Cinquefoil. <i>P. reptans</i> . P. —	3.	255.1.	
239. Spring Cinquefoil. <i>P. verna</i> . P. —	3.	255.3.	
240. Tormentil. <i>Tormentilla erecta</i> . P. —	7.	257.	589.
241. Purple Marsh Cinquefoil. <i>Comarum palustre</i> . P. —	5.	256.2.	636.
242. Avens: Herb Bennet. <i>Geum urbanum</i> . P. —	8.	253.1.	672.
POLYANDROUS PLANTS.			
243. Yellow Water Lilly. <i>Nymphaea lutea</i> . P. —	223.	368.	603.
244. White Water Lilly. <i>N. alba</i> . P. —	223.	368.	602.
245. Red Poppy. <i>Papaver Rhæas</i> . A. —	142.	308.	
246. Long rough-headed Poppy. <i>P. Argemone</i> . A. —	143.5.	308.	
247. Greater Celandine. <i>Celidonium majus</i> . —	146.	309.	543.
248. Herb Christopher. <i>Alesea Christophoriana</i> . P. —	320.	262.	498.
249. Lime Tree. <i>Tilia Europæa</i> . —	523.	473.	553.
250. Dwarf Cistus. <i>Cistus Helianthemum</i> . P. —	170.	341.	101.
251. Lark Spur. <i>Delphinium Consolida</i> . A. —	42.	273.	683.
252. Columbines. <i>Aquilegia vulgaris</i> . P. —	41.	273.	695.
253. Water Aloe. <i>Stratiotis Aloides</i> . P. —	140.	290.	337.
254. Pasque Flower. <i>Anemone Pulsatilla</i> . P. —	10.	260.	153.
255. Wood Anemone. <i>A. nemorosa</i> . P. —	12.	259.	549.
256. Meadow Rue. <i>Thalictrum flavum</i> . P. —	347.	203.	
257. Lesser Spearwort. <i>Ranunculus Flammula</i> . —	17.10.	250.	575.
258. Pilewort. <i>R. Ficaria</i> . P. —	10.	246.	499.
259. Sweet Wood Crowfoot. <i>R. auricomus</i> . P. —	16.6.	248.	665.

229. *Common Dropwort*. Swine are extremely fond of the roots of this plant, and will make great devastation in pastures where they find it.

237. *Silver Weed*. The same animals are not less fond of the roots of this plant, which have somewhat the taste of parsnips; and Ray informs us that they were formerly eaten in this country, as they still are in less happy climates. *Gunner*.

240. *Tormentil*. The roots of Tormentil being an excellent astringent, are used by the farmers in Holland as a remedy against the staling of blood among their cattle.

243. *Yellow Water Lilly*. It is remarkable that scarcely any animals, except hogs, will touch this plant, and they will eat both roots and leaves, and fatten by their use. *Flor. Oeconomica*.

	O.	G.	Sh.	H.	S.	
220.	0	0	1	0	0	In waste places in chalky grounds. 6.
221.	0	1	1	0	0	About hedges and the borders of fields. 6.
222.		1	1	1		In hedges, common. 3, 4.
223.	10	1	1	0	1	In woods and hedges, not common. 5.
224.		1	1			In woods and hedges, not common. 4.
225.	1	1	1	1		In hedges. 5.
226.	1	1	1	1	1	In woods and hedges. 5.
227.	1	1	1	1		With the foregoing. 4.
228.	1	1	1	1		With the foregoing. 5.
229.	1	1	1	0	1	On upland pastures. 7.
230.	0	1	1	0	1	In moist meadows, and by rivers and brooks. 6-8.
231.	1	1	1	0	1	In hedges. 5, 6.
232.	1	1	1	0	1	In heaths, among furze, in gravelly soil. 6.
233.	0	1	1	0	1	In woods and mountainous places. 5, 6.
234.		1	1			In hedges every where, and thickets. 5-9.
235.	1	1	1	0		With the former in moist places. 6, 7.
236.	10	1	1	0	0	In woods, and under hedges. 4, 5.
237.	1	1	1	1	1	By the road sides; in low pastures. 6-8.
238.	1	1	1	1		In like places with the foregoing. 6.
239.	1	1	1	1		On dry barren pastures. 5, 6.
240.	1	1	1	0	1	In dry woods and pastures, common. 6, 7.
241.	0	1	1	0	0	In bogs and marshes. 6.
242.	1	1	1	10	1	In hedges, woods, and thickets, common. 6-8.
243.	0	0	1	0	1	In rivers, ponds, and ditches. 8.
244.	0	0	1	0	1	With the foregoing, but not so common. 7.
245.	1	1	1	0		In corn fields, arable ground. 6, 7.
246.		1	1	0		On arable lands. 6.
247.	0	0	0	0	0	In waste places. 5, 6.
248.	0	1	1	0	0	In woods, in the North. 5, 6.
249.	1	1	1	1		In groves and vistas cultivated. 7.
250.		1	1	1	0	On dry, and particularly chalky downs. 7.
251.	0	1	1	10	0	Among standing corn, rare. 6.
252.	0	1	0	1	0	In woods, in the North. 6.
253.		0			1	In the fenny countries. 6.
254.	0	1	1	0	0	In mountainous pastures. 4.
255.	10	1	1	0	0	In woods, thickets, and hedges. 4.
256.	1	1	1	1	10	In wet pastures, and by river sides. 6, 7.
257.	0	0	0	1	0	In marshy grounds, common. 6-9.
258.	0	1	1	0		In meadows and pastures every where. 4.
259.	1	1	0	0		In woods and hedges. 4.

248. *Herb Christopher*. This is one of the poisonous herbs to cattle, but is happily scarce in *England*, and not found elsewhere than in woods.

249. The leaves of the *Line Tree* are in some parts of *Europe* laid up as fodder for sheep and goats. Bees get their finest honey from these trees. Crows are fond of the leaves, but they are said to vitiate the milk.

255. *Wood Anemone*. Horned cattle, when removed from higher grounds into woods and woody pasturage, frequently eat this herb, and many observations have proved that it causes the bloody flux among them. *Lin. Gunner*.

	Hill.	Ray.	Flor. Dan.
260. Round-leaved Water Crowfoot. <i>Ranunculus sceleratus</i> . A. —	16.8.	249.1.	577.
261. Upright Meadow Crowfoot. <i>R. acris</i> . P. —	16.4.	248.4.	105
262. Creeping Crowfoot. <i>R. repens</i> . P. —	15.2.	247.	795.
263. Bulbous Crowfoot. <i>R. bulbosus</i> . P. —	15.1.	247.	557.
264. Various-leaved Crowfoot. <i>Aquaticus</i> . P. —	17.	249.	376.
265. Marsh Marigold. <i>Caltha palustris</i> . P. —	34.	272.	668.
266. Globe Flower. <i>Trollius Europæus</i> . P. —	33.	272.	133.
DIDYNAMOUS PLANTS, with naked seeds.			
267. Bugle. <i>Ajuga reptans</i> . P. —	372.	245.	705
268. Water Germander. <i>Teucrium Scordium</i> . P. —	373.	246.	593.
269. Wild Thyme. <i>Thymus Serpyllum</i> . P. —	350.	230.	105
270. Wild Basil. <i>T. Acinos</i> . A. —	362.	238.	814.
271. Great wild Basil. <i>Clinopodium vulgare</i> . P. —	364.	239.	
272. Wild Marjoram. <i>Origanum vulgare</i> . P. —	357.	236.	638.
273. Corn Mint. <i>Mentha arvensis</i> . P. —	351.1.	232.1.	512.
274. Water Mint. <i>M. aquatica</i> . P. —	352.	233.	673.
275. Ground Ivy. <i>Glechomahederacea</i> . P. —	369.	243.	789.
276. Stinking Horehound. <i>Ballota nigra</i> . A. —	370.	244.	
277. Common Horehound. <i>Marrubium vulgare</i> . —	363.	239.	
278. Cat-mint. <i>Nepeta Cataria</i> . P. —	360.	237.	580.
279. Betony. <i>Betonica officinalis</i> . P. —	361.	238.	726.
280. Hedge Nettle. <i>Stachys sylvatica</i> . P. —	359.	237.	692
281. Clowns Alheal. <i>S. palustris</i> . P. —	367.	242.	742
282. Nettle Hemp. <i>Galeopsis Tetrabit</i> . A. —	366.6.	240.	588
283. Narrow-leaved Alheal. <i>G. Ladanum</i> . A. —	368.	242.	728
284. White Dead Nettle. <i>Lamium album</i> . P. —	365.	240.	594.
285. Red Archangel. <i>L. rubrum</i> . A. —	365.	240.	523.
286. Great Henbit. <i>L. amplexicaule</i> . A. —	365.	240.	752.
287. Motherwort. <i>Leonurus Cardiaca</i> . B. —	364.	239.	727.
288. Self-heal. <i>Prunella vulgaris</i> . P. —	362.	238.	872
289. Hooded Willow Herb. <i>Scutellaria galericulata</i> . —	370.	244.	637.
with capsules.			
290. Toad Flax. <i>Antirrhinum Linaria</i> . P. —	108.	281.	602
291. Least Toad Flax. <i>A. minus</i> . A. —	112.	283.	502.
292. Yellow Rattle, or Cock's-comb. <i>Rhinanthus Crista Galli</i> . A. —	121.	284.	202
293. Common Loufewort. <i>Pedicularis sylvatica</i> . —	120.1.	284.3.	225.
294. Marsh Loufewort. <i>P. palustris</i> . P. —	120.2.	284.	402
295. Crested Cow wheat. <i>Melampyrum cristatum</i> . A. —	124.2.	286.	102
296. Common Cow-wheat. <i>M. pratense</i> . A. —	124.	286.	145.

260—264. *Crowfoots*, or *Butter Cups*. Scarcely any of these plants are relished by the cows or horses, from their biting taste; the *Round-leaved Water Crowfoot*, the *Upright Meadow Crowfoot*, and particularly the *Various-leaved Crowfoot*, are constantly left untouched, while growing. The acrimony in these plants appears to be dissipated in the hay, into which they often enter in a large proportion.

265. *Marsh Marigold*. It has been conjectured that the yellowness of the butter is in many places owing to the cattle having fed on the large yellow flowers of this plant; which is however a great error, as cows do not touch the plant, although they pare the ground around it.

273, 274. *Mints*. All Mints are thought to have the property of retarding or preventing the curdling of milk. Hence it is that in some places, towards the latter end of the year, when herbage is scarce, and the cows are necessitated to eat these plants in more considerable quantities, the dairy-woman has difficulty to make her cheese.

Flor. Dan.	O.	G.	Sh.	H.	S.	
260.	o	i	o	o		In watery places, common. 5, 6.
261.	o	i	i	o	o	In meadows and pastures, common. 6, 7.
262.		i		i		In meadows and pastures every where. 5, 6.
263.						With the foregoing every where. 5.
264.	o	o	o	o	o	In rivers, ditches, ponds, &c. — 6.
265.	o	i	i	o	o	In moist meadows and brooks. 4.
266.	o	i	i	o	i	In mountainous pastures, in the North. 5, 6.
267.	o	i	i	o	o	In moist meadows and pastures, and woods. 5, 6.
268.	o	i	i	o	o	In the fens, common. 8.
269.		i	i	o		On dry pastures, common. 7, 8.
270.	io	o	io	i		On chalky, gravelly downs. 7, 8.
271.		i	i	o		About hedges, and in dry pastures. 7.
272.	c	i	i	i		About hedges and bushes. 7.
273.	o	i	oi	i	o	On arable land and corn grounds. 8, 9.
274.				i	o	In watery places, and by rivers, ponds, &c.
275.	o	o	i	io	o	Under shady hedges, and in woods. 5, 6.
276.	o	o	o	o		In waste places and by hedges, every where. 7.
277.	o	o	o	o		On arable land, dry pastures, and waste places.
278.	o	o	i	o	o	By hedges, and on upland pastures. 7.
279.		o	i			On heaths, and in woods, common. 7, 8.
280.	oi	i	i	o	o	In hedges and woods every where. 7, 8.
281.	o	o	i	o	o	In watery places, and about rivers. 8.
282.	o	i	i	o	o	On arable grounds, and borders of fields. 8.
283.	i	i	i	o		On arable grounds. 7, 8.
284.	io	i	i	o	o	About hedges, and in waste places. 5, 6.
285.	o	i	i	i		In waste places, and on arable land. 5.
286.		i	i	i		On arable grounds, very common. 6.
287.	oi	i	i	i	o	On dunghills, and among rubbish. 7.
288.	i	i	i	io		In meadows and pastures every where. 8.
289.	i	i	i	o	o	About waters, and watery places. 8, 9.
290.	o	io	oi	o	o	About hedges, and dry barren pastures. 7.
291.	i	o	i	o	oi	On arable land, and among corn. 6—9.
292.	io	i	i	io		In meadows and pastures, common. 6, 7.
293.	o					In boggy marshy meadows and heaths. 6, 7.
294.	o	i	o	o	oi	In moist and marshy meadows and pastures. 6.
295.	i	i	i			In woods, not common. 7.
296.	ii	i	i	o	o	In woods, very common. 7, 8.

280. *Hedge Nettle*. Horses abominate this plant. Cows, notwithstanding its fetid smell, will eat it, and *Gunner* says it undoubtedly increases their milk greatly.

281. *Clowns Alba*. The roots of this plant are among the acceptable food of swine: they are indeed sapid enough to have supplied in some seasons the want of bread to the human species.

293, 294. *Loufewort*. These plants are very noxious to cattle, when through penury, or other causes, they are induced to eat them. *Gunner* affirms, that it is very common for cattle, that are removed into pastures where the *Marj* *Loufewort* abounds, to die suddenly from staling of blood. He observes, that such as are bred where it is plentiful, either do not eat it, or are not hurt by it. It is too common with us.

296. *Corn-wheat*. Cows are extravagantly fond of this plant, and the richness, as well as yellowness, of the butter, in some places, is with great reason attributed to the abundance of this plant in the pastures. *Flor. Lapi* N° 240.

297. Common

	Hill.	Ray.	Flor. Dan.
297. Common Eye-bright. <i>Euphrasia officinalis</i> . —	122.1.	284.	
298. Red Eye-bright. <i>E. odontites</i> . A. —	122.2.	284.2.	625.
299. Broom rape. <i>Orobancha major</i> . P. —	127.	288.	
300. Knobby-rooted Figwort. <i>Scrophularia nodosa</i> . —	114.	283.2.	
301. Toothwort. <i>Latbraea squamaria</i> . P. —	128.	288.	136.
TETRADYNAMOUS PLANTS.			
302. Whitlow Grass. <i>Draba verna</i> . A. —	259.	292.	
303. Mithridate Mustard. <i>Tblaspi campestre</i> . A. —	269.	305.1.	
304. Shepherds Purse. <i>T. Bursa Pastoris</i> . A. —	260.	306.	729.
305. Dittander: Pepperwort. <i>Lepidium latifolium</i> . —	261.	304.	557.
306. Narrow-leaved wild Cress. <i>L. ruderae</i> . A. —	268.1.	303.	184.
307. Scurvy Grass. <i>Cochlearia officinalis</i> . B. —	266.	302.	135.
308. Horse Rhadish. <i>C. Armoracia</i> . P. —	261.	301.	
309. Gold of Pleasure. <i>Myagrum sativum</i> . A. —	263.	302.	
310. Woad. <i>Isatis tinctoria</i> . B. —	254.	307.	
311. Great Tower Mustard. <i>Turritis glabra</i> . A. —	249.	293.	809.
312. Wild Navew, or Rape. <i>Brassica Napus</i> . B. —	240.	295.	
313. Wild Mustard, or Charlock. <i>Sinapis arvensis</i> . A. —	242.	295.	678.
314. Water Rhadish. <i>Sisymbrium amphibium</i> . P. —	265.	301.	
315. Flix Weed. <i>S. Sophia</i> . A. —	251.	298.	528.
316. Hedge Mustard. <i>Erysimum vulgare</i> . A. —	238.	298.	560.
317. Treacle Wormseed. <i>E. cheiranthoides</i> . A. —	250.	298.	731.
318. Winter Cresses, or Rocket. <i>E. Barbarea</i> . —	237.4.	297.	
319. Jack by the Hedge: Sauce alone. <i>E. Alliaria</i> . P. —	235.	293.	
320. Cuckow Flower. <i>Cardamine pratensis</i> . P. —	246.	299.	
321. Bitter Cresses. <i>C. amara</i> . P. —	246.2.	299.	
322. White and Yellow flowered Charlock. <i>Raphanus Raphanistrum</i> . A. —	244.	296.	
323. Sea Rocket. <i>Bunias Cakile</i> . A. —	257.2.	307.	
324. Sea Colewort. <i>Crambe maritima</i> . P. —	257.1.	307.	316.
MONADELPHOUS PLANTS.			
325. Crow foot Cranes bill. <i>Geranium pratense</i> . P. —	198.	360.	
326. Herb Robert. <i>G. Robertianum</i> . B. —	196.	358.	694.
327. Round-leaved Cranes-bill. <i>G. rotundifolium</i> . A. —	196.	359.19.	
328. Common Dove's-foot Cranes-bill. <i>G. molle</i> . A. —	196.	359.11.	679.
329. Hemlock-leaved Cranes-bill. <i>G. cicutarium</i> . A. —	199.	357.2.	
330. Common Mallow. <i>Malva sylvestris</i> . B. —	25.1.	251.1.	
331. Dwarf Mallow. <i>M. rotundifolia</i> . A. —	25.2.	251.	721.
332. Veilvain Mallow. <i>M. Alcea</i> . P. —	27.	252.	
DIADELPHOUS PLANTS.			
333. Common Fumitory. <i>Fumaria officinalis</i> . A. —	348.	204.	
334. Common Milkwort. <i>Polygala vulgaris</i> . P. —	81.	287.	516.
335. Dyers Weed. <i>Genista tinctoria</i> . —	323.	474.	546.
336. Liquorice Vetch. <i>Astragalus glycyphylus</i> . —	203.	326.	
337. Kidney Vetch. <i>Anthyllis Vulneraria</i> . P. —	290.	325.	

322. *Charlocks*. The pests of our corn-fields, and which have been thought to give a most unwholesome quality to bread when the seeds abound in grain.

326. *Herb Robert*. This plant is in great reputation with some farmers, on account of its prevailing virtues against staling of blood, and the bloody flux in cattle: in which cases it is said to be the best among a great variety of means commonly used upon such occasions.

Diadelphous Plants. A general view of this class shews at once how very acceptable they are to almost all cattle. Cows and sheep refused none, and horses not more than three out of the whole number with which they were tried. They afford the richest food for cattle, and

	O.	G.	Sh.	H.	S.	
297.	1	1	1	1	o	In meadows and pastures, very common. 3, 9.
298.	1	1	1	1		On the borders of fields, and on arable ground, 3, 9.
299.						In dry pastures. 5, 6.
300.	o	1	o	o	o	In woods and moist hedges. 7, 8.
301.	o	1	1	o	o	In shady places at the foot of mountains: rare.
302.	10	1	1	1	o	On mole hills, in dry pastures. 4.
303.	10	1	o	o	1	On arable land, and in corn fields. 6, 7.
304.	1	1	1	1	1	Every where in fields and waste places. 3, 4.
305.	1	1	1	o		In meadows and pastures: rare. 6, 7.
306.	1	1		o	o	On the sea coasts: rare. 6.
307.	1	o	o	o		On the sea coasts. 4, 5.
308.	o	o	o	o	o	In waste places, and about ditches. 5.
309.	1	1	1	1		In flax fields. 6.
310.	1	o	o	o		On the borders of fields, and on arable land: rare. 7.
311.	1	1	1	o	1	In pastures, particularly of a gravelly soil. 5.
312.	1	1			1	On the banks of ditches, and among corn. 5.
313.	1	1	1	10	1	The pest of arable land and standing corn. 5.
314.	1	1	1	1	1	In watery places, meadows, and brooks. 6.
315.	1	o	1	10	o	In orchards, about ruins, highways, and commons. 7.
316.	o	1	1	o	o	By the way sides, and under walls, waste places. 5.
317.	1	1	1	1	1	In corn fields: scarce. 7.
318.	1	10	10	o	o	In ditches and watery places, very common.
319.	1	1	o	o	o	On banks about hedges, very common. 5.
320.	10	1	1	o	o	In moist meadows and pastures, every where. 4.
321.	10		1			With the foregoing; especially on boggy soil. 4, 5.
322.	o		o	1		The pest of corn fields in <i>England</i> . 6, 7.
323.				1		On the sea shores. 6.
324.	1	1	1	1	1	On the sea shores. 5.
325.	1	1	1	1	1	On the borders of moist fields, meadows, &c. 6, 7.
326.		1	o	1	o	Under shady hedges, and in woods. 4—6.
327.	o		1	1	o	About hedges, way sides. 7.
328.		1	1			With the foregoing, and about hedges, common, 5, 6.
329.	1		10	1		By the way sides, borders of corn fields. 4—6.
330.	1			1		Every where by hedges and in waste places. 3—10.
331.	o	1	o	1	1	In the like places with the foregoing. 6—10.
332.	1	1	1	1		In lanes, hedges, and the borders of fields. 7—9.
333.	1	10	1	o	o	In corn fields, arable land, on banks, &c. 4—6.
334.	1	1	1		o	On upland pastures and heaths, common. 5, 6.
335.	1	1	1	1		On coarse pastures, and the borders of fields.
336.	1	1	1	1	o	In meadows, pastures, and about hedges.
337.	1	1				On dry, chalky pastures. 7, 8.

and are cultivated in divers parts of *Europe* with all possible attention. With us the *Common Purple Trefil*, or Clover, is mostly sown. Lately some trials have been made with the *Saint Foin*, 339, and some have thought it answers better than Clover. I say nothing of the exotic *Lucern*.

Among these Plants, the *Kidney Vetch*, 327, is particularly acceptable to sheep, inasmuch that separate cultivation of it has been recommended; but it will not succeed well except on chalky grounds.

	Hill.	Ray.	Flor. Dan.
338. Wood Pease; Heath Pease. <i>Orobis tuberosus</i> . P.	280.2.	324.	781.
339. St. Foin; Cockhead. <i>Hedysarum Onobrichis</i> . P.	293.	327.	
340. Narrow-leaved Everlasting Pea. <i>Lathyrus sylvestris</i> . P.	280.	319.	325.
341. Common Yellow Vetchling. <i>L. pratensis</i> . P.	280.	320.	527.
342. Common Vetch, or Tare. <i>Vicia sativa</i> . A.	283.	320.1.	522.
343. Bush Vetch. <i>V. Sepium</i> . P.	283.	320.2.	699.
344. Tufted Wood Vetch. <i>V. sylvatica</i> . P.	285.4.	322.4.	277.
345. Common tufted Vetch. <i>V. Cracca</i> . P.	285.3.	322.3.	804.
346. Smooth-podded Tine Tare. <i>Ervum tetraspermum</i> . A.	285.2.	322.2.	95.
347. Hairy-podded Tine Tare. <i>E. hirsutum</i> . A.	285.1.	322.1.	639.
348. Sea Pease. <i>Pisum maritimum</i> . P.	278.	319.	338.
349. Bird's-foot Trefoil. <i>Lotus corniculata</i> . P.	314.	334.	
350. White Trefoil. <i>Trifolium repens</i> .	302.1.	327.1.	
351. Honeyfuckle Trefoil, or Clover. <i>T. pratense</i> .	302.	328.	
352. Hop Trefoil. <i>T. agrarium</i> . A.	307.	330.	558.
353. Lesser Hop Trefoil. <i>T. procumbens</i> . P.	307.	330.	796.
354. Melilot. <i>M. Melilotus officinalis</i> . B.	308.	331.	
355. Yellow Lucern, or Medick. <i>Medicago falcata</i> .	311.	333.	233.
356. Melilot Trefoil. <i>M. lupulina</i> .	308.	331.2.	
357. Rest-harrow, or Cammock. <i>Ononis arvensis</i> . P.	310.	332.	
POLYADELPHOUS PLANTS.			
358. St. Peter's Wort. <i>Hypericum quadrangulum</i> .	175.7.	344.7.	640.
359. St. John's Wort. <i>H. perforatum</i> . P.	174.1.	342.1.	
360. Hairy St. John's Wort. <i>H. hirsutum</i> . P.	175.4.	343.4.	802.
SYNGENESIOUS PLANTS.			
361. Dandelion. <i>Leontodon Taraxacum</i> . P.	441.	170.	574.
362. Rough Dandelion. <i>L. hirsutum</i> . P.	442.3.	171.3.	
363. Hawkweed with bitter roots. <i>L. autumnale</i> . P.	438.	164.1.	501.
364. Long-rooted Hawkweed. <i>Hypochaeris radicata</i> . P.	438.2.	165.6.	150.
365. Spotted Hawkweed. <i>H. maculata</i> . P.	439.11.	167.17.	149.
366. Creeping Mouse-ear. <i>Hieracium Pilosella</i> .	441.	170.	
367. Broad-leaved bushy Hawkweed. <i>H. sabaudum</i> .	440.	167.1.	
368. Succory Hawkweed. <i>Crepis tectorum</i> . A.	438.3.	165.9.	
369. Sowthistle. <i>Sonchus oleraceus</i> . A.	437.	163.	682.
370. Tree, or Corn Sowthistle. <i>S. arvensis</i> . P.	437.7.	163.	606.
371. Ivy-leaved wild Lettuce. <i>Phrenanthes muralis</i> . P.	436.4.	162.5.	509.
372. Yellow Goatbeard. <i>Tragopogon pratense</i> . B.	442.	171.	
373. Nipplewort. <i>Lapsana communis</i> . A.	443.	173.	500.
374. Wild Succory, or Endive. <i>Cichorium Intybus</i> . B.	443.	172.	
375. Burdock. <i>Arctium Lappa</i> . B.	432.	197.	642.
376. Carline Thistle. <i>Carlina sylvestris</i> . B.	449.	175.	

341. Common Yellow Vetchling. Uncommonly grateful to cattle; as is also the

345. Common tufted Vetch. Both these are very common in our best meadows and pastures.

350. White Trefoil. Wherever this plant occurs spontaneously, and abounds, it is always considered as an indication of the goodness of the soil; and this is a thing well known to all farmers.

The richness of all meadows and pastures is naturally owing to their abounding principally with the *Trefoils*, and others of the same class, with a due mixture of the more acceptable *Grasses*.

	O.	G.	Sh.	H.	S.	
338.	1	1	1	1		In woods; and sometimes in meadows, &c. 5.
339.	1	1	1	11		On chalky meadows and pastures. 7.
340.	1	1	1	1		In woods and hedges. 7, 8. [7, 8.
341.	1	1	1	1	o	In woods, hedges, meadows, and pastures, every where.
342.	11	1	1	11		Cultivated: and often wild in corn fields.
343.	1	1	1	1	1	In meadows, pastures, hedges, and woods. 5.
344.	1	1	1	1		In hedges and woods. 7, 8.
345.	1	1	1	1	o1	In woods and hedges, common, and in pastures.
346.	1	1	1	1		On tilled grounds, and among corn. 6.
347.	1	1	1	1		With the foregoing. 6.
348.	1	1	1	1		On the sea shores. 7.
349.	1	1	1	1	10	In meadows, pastures, woods, every where. 7, 8.
350.	1	1	1	1	o	<i>The pride</i> of meadows and pastures. 5—9.
351.	1	1	1	11	1	With the former. 5—9. both perennial.
352.	1	1	1	1		In sandy pastures, corn fields. 6.
353.	1	1	1	1		In meadows and pastures, common. 5—8.
354.	1	1	1	1	1	In hedges, and in the borders of corn fields. 6, 7.
355.	1	1	1	1		On the borders of fields, not common. 7.
356.	1	1	1	10		In pastures every where. 5—8.
357.	1	1	11	o	o	On barren pastures, way sides. 6—8.
358.	1	1	1	c	o	In moist hedges, and the banks of brooks.
359.	1	1	1	o	o	In hedges and bushes, common. 7.
360.			1	c		In hedges and bushes, very common. 7.
361.	o1	1	10	c	1	In meadows and pastures, every where. 4—6.
362.						With the former every where. 5, 6.
363.	o	1	o	1	1	With the foregoing, very common. 8.
364.	1					In meadows and pastures, common. 5—7.
365.	1	1	o1	1	1	In mountainous pastures: scarce in <i>England</i> . 7.
366.	o1	1	10	o	1	On uplands and dry pastures, common. 5.
367.	1	1	1	1	1	In hedges and woods, common. 7, 8.
368.	1	1	1	1	1	In meadows and pastures, very common. 6—9.
369.	1	1	1	11	1	In manured grounds, corn fields, waste places.
370.	1	1		11		In corn fields and about hedges. 7.
371.	1	1	11			In shady lanes and woods. 7, 8.
372.	1	10	1	1	11	In meadows and pastures. 6.
373.	1	o	1	1	1	In hedges and waste places, kitchen gardens. 6, 7.
374.	o	1	1	o	1	On the borders of corn fields. 7, 8.
375.	1	1	o	o	o	By the way sides, waste places, &c. 7, 8.
376.	o	1				On dry pastures. 6.

356. *Medicet Trefoil*. This plant, which is exceedingly common, is notwithstanding much less agreeable to cattle than the rest of the Trefoils. This observation occurred to *Plukenet*, who called it *Medica pratensis lutea non grata jumentis*; and *Linnaeus* has informed us particularly that future observations have confirmed the remark.

357. *Reft-barrow*, or *Cammoick*. A decoction of this plant has been much recommended to horses labouring under a stoppage of urine. It is the pest of some corn-fields; but in its younger state, before the plant has acquired its thorns, is a most acceptable herb to sheep.

366. *Creeping Mouse-ear*. Very common on our dry pastures, and sometimes eaten by sheep; to which animals *Ray* says it is very hurtful from its powerful astringent quality.

	Hill.	Ray.	Flor. Dan.
377. Cotton Thistle. <i>Onopordon Acanthium</i> . B. —	430.	196.	
378. Spear Thistle. <i>Carduus lanceolatus</i> . B. —	429.	195.	
379. Musk Thistle. <i>C. nutans</i> . B. —	428.	193.	675.
380. Dwarf Carline Thistle. <i>C. acaulis</i> . P. —	429.	195.	
381. Soft or gentle Thistle. <i>C. heterophyllus</i> . —	428.	193.1.	1097
382. Thistle upon Thistle. <i>C. crispus</i> . A. —	429.	194.2.	621.
383. Marsh Thistle. <i>C. palustris</i> . P. —	429.	194.4.	
384. Saw-wort. <i>Serratula tinctoria</i> . P. —	431.	196.	281.
385. Corn Saw-wort, or Way Thistle. <i>S. arvensis</i> . P. —	428.	194.	644.
386. Trifid Water Hemp Agrimony. <i>Bidens tri-</i>	461.	187.	
partita. A. —			
387. Whole-leaved Water Hemp Agrimony. } B. cernua. A. —	461.2.	187.	
388. Dutch, or Hemp Agrimony. <i>Eupatorium</i> } cannabinum. P. —			
389. Tansy. <i>Tanacetum vulgare</i> . P. —	461.	188.	
390. Mugwort. <i>Artemisia vulgaris</i> . P. —	463.	190.	
391. Wormwood. <i>A. Absinthium</i> . P. —	462.	188.	
392. Sea Wormwood. <i>A. maritima</i> . P. —	462.	188.	
393. Mountain Cudweed. <i>Gnaphalium dioicum</i> . —	454.	181.	
394. Upright Cudweed. <i>G. fl. vaticum</i> . B. —	452.2.	180.2.	
395. Black-headed Cudweed. <i>G. uliginosum</i> . A. —	454.5.	181.6.	
396. Coltsfoot. <i>Tussilago Farfara</i> . P. —	446.	173.	595.
397. Butter-bur. <i>T. Petasites</i> . P. —	452.	179.	
398. Golden Rod. <i>Solidago Virga aurea</i> . P. —	449.	176.	663.
399. Ragwort. <i>Senecio Jacobææ</i> . P. —	450.	177.	
400. Groundsel. <i>S. vulgaris</i> . A. —	451.	178.	513.
401. Blue flowered Fleabane. <i>Erigeron acre</i> . —	448.	175.	
402. Elecampane. <i>Inula Helenium</i> . P. —	449.	176.	728.
403. Middle Fleabane. <i>I. dysenterica</i> . P. —	447.	174.	410.
404. Small Fleabane. <i>I. Pulicaria</i> . A. —	447.	174.2.	613.
405. Sea Star-wort. <i>Aster Tripolium</i> . P. —	448.	175.	615.
406. Corn Marigold. <i>Chrysanthemum segetum</i> . —	456.	182.	
407. Great Daisie. <i>C. Leucanthemum</i> . P. —	459.	184.1.	
408. Sweet Chamomile. <i>Anthemis nobilis</i> . P. —	459.	185.2.	
409. Stinking Mayweed. <i>A. Cotula</i> . A. —	460.	184.3.	
410. Corn Chamomile. <i>A. arvensis</i> . B. —	459.1.	185.4.	
411. Feverfew. <i>Matricaria Parthenium</i> . B. —	460.	187.	674.
412. Corn Feverfew. <i>M. Chamomilla</i> . A. —	459.	184.	
413. Milfoil; Yarrow. <i>Achillea Millefolium</i> . P. —	458.	183.	737.
414. Sneezewort; Goose tongue. <i>A. Ptarmica</i> . P. —	457.	183.	643.
415. Common Daisie. <i>Bellis perennis</i> . P. —	459.	184.	503.
416. Great Knapweed. <i>Centaurea Scabiosa</i> . —	433.	198.	
417. Common Knapweed. <i>C. nigra</i> . P. —	433.	198.	
418. Blue Bottle. <i>C. Cyanus</i> . A. —	433.	198.	
419. Common Cudweed. <i>Filago germanica</i> . A. —	453.	180.	
420. Least Cudweed. <i>F. montana</i> . A. —	454.	181.	
421. Hairy Sheeps Scabious. <i>Jasione montana</i> . A. —	71.6.	278.	319.
422. Dogs Violet. <i>Viola canina</i> . P. —	204.	364.	
423. Pansies; Hearts Ease. <i>V. tricolor</i> . A. —	205.	365.9.	623.

406. *Corn Marigold*. This plant infests the corn-fields in many parts of Europe, and in Denmark there was a law enforcing the farmers to rid their fields of it.

407. *Great Daisie*. Very common in our pastures, but unacceptable to cows; neither is the common Daisie relished by them.

417. *Common Knapweed*. A harsh and ungrateful plant to cows and sheep, but impossible to extirpate, though very common in our best meadows and pastures.

419. *Cudweed*,

	O.	G.	Sh.	H.	S.	
377.	0		0	0		In waste places: and on fallow grounds.
378.	0	0	0	1	0	Waste places, about hedges; fallow lands.
379.	10	0	0	1		On uplands and fallow grounds abundantly.
380.	0			0		On dry pastures: heaths and downs. 7.
381.	1	1	1	1	0	In marshy pastures, not very common.
382.	1	1	1	1		About ditches and hedges, common. 6.
383.				11		In marshy pastures, and in woods. 7.
384.	0	1	1	10	0	In woods, and barren pastures. 7.
385.	10	1	11	1	0	By the way sides, and on fallow grounds.
386.	1	0	1	0	0	In marshy grounds, and about waters. 7, 8.
387.		1		0		In ditches, and watery places. 7, 8.
388.	0	1	0	0	0	About waters, and moist hedges. 7, 8. [South. 8.
389.	1	0	1	0	0	On high pastures in the North, and by rivers in the
390.	1	10	0	1	0	About hedges, corn fields, and wastes. 8.
391.	1	10	1	1	0	In waste places, and by road sides. 8, 9.
392.	0	0	0	1		On the sea coast. 8.
393.	0	0	1	1	1	On dry upland pastures in the North. 5.
394.		1				In dry woods and pastures. 8.
395.	0	0				In watery places, and where water has stagnated. 8.
396.	10	1	1	0	0	In moist waste places, and among corn. 3.
397.	1	1	1	1		In moist meadows by rivers and brooks. 3, 4.
398.	1	1	1	1	1	In woods, hedges, and among furze, on heaths.
399.	1					In meadows, pastures, and by way sides. 7.
400.	1	1	0	0	1	In manured waste grounds every where.
401.	0	0				On upland dry pastures, among bushes.
402.	0	1	0	1	0	In hedges of moist meadows. 7, 8.
403.	0	0	0			In watery places; about banks of rivers.
404.	0	0	1	0		In moist places, and where water has stagnated.
405.	1	1	10	1	0	In salt marshes. 8.
406.						Among corn too plentifully. 6, 7.
407.	0	1	1	1	0	In meadows and pastures, every where. 5.
408.			1	1	0	In damp places on heaths, &c. 7, 8, 9.
409.	0	0	0	0	0	In and about corn fields: farm yards.
410.	1		1	10		With the former. 7, 8.
411.						In waste places, and about hedges. 6.
412.	1	1	1	0	0	In corn fields. 6.
413.	10	10	1	1	1	In meadows and pastures. 5—7.
414.	1	1	1	1	1	In moist woods and meadows. 8.
415.	1	1	1	1	1	In every pasture. 3—9.
416.	0	1	1	1	1	In and about corn fields. 6, 7.
417.	10	1	10	1	10	In meadows and pastures, common. 7, 8.
418.	1	1	1	0	0	Among the corn. 7.
419.	0	0				By the way sides, and in dry pastures. 6, 7.
420.	0	0	1			On sandy heaths. 6, 7.
421.						On downs and heaths. 6, 7.
422.	1	1	1	0	1	On heaths. 4.
423.	1	1	0	0	10	On corn grounds. 5—9.

419. *Cudweed*, so called because husbandmen formerly gave it to cattle that did not ruminate freely.

A general view of the *syngenesious* class, shews at once the vast difference between this and the *diadelphous*; of the former we see great numbers are rejected by cows, and by sheep more particularly.

	Hill.	Ray.	Flor. Dan.
424. Sweet Violet. <i>Viola odorata</i> . P. —	204.	364.1.	309.
425. Hairy violet. <i>V. hirta</i> . P. —	205.	365.8.	618.
426. Touch me not, <i>Impatiens noli met tangere</i> . A. —	207.	316.	582.
GYNANDROUS PLANTS.			
427. Male Orchis Salep. <i>Orchis masculula</i> . P. —	474.	376.3.	457.
428. Female Orchis. <i>O. morio</i> . P. —	474.	377.4.	253.
429. Male handed Orchis. <i>O. latifolia</i> . P. —	474.	380.19.	266.
430. Red handed Orchis. <i>O. conopsea</i> . B. —	476.21.	381.21.	224.
431. Female handed Orchis. <i>O. maculata</i> . P. —	476.20.	381.20.	
432. Frog Orchis. <i>Satyrion viride</i> . P. —	476.22.	381.22.	77.
433. Twayblade. <i>Ophrys ovata</i> . P. —	478.	385.	137.
434. Grass Wrack. <i>Zostera marina</i> . P. —	533.	52.1.	15.
MONOECIOUS PLANTS.			
435. Spiked Sedge. <i>Carex vulpina</i> . P. —	503.28.	423.8.	308.
436. Prickly Sedge. <i>C. muricata</i> . P. —	503.32.	424.12.	284.
437. Baitard Sedge. <i>C. Pseudo-Cyperus</i> . P. —	503.12.	419.12.	
438. Bladder Sedge. <i>C. vesicaria</i> . A. —	503.14.	420.14.	647.
439. Great brown Carex or Sedge. <i>C. acuta</i> . P. —	503.2.	417.1.	
440. Burr-reed. <i>Sparganium erectum</i> . P. —	506.	437.	
441. Cats-tail. <i>Typha palustris</i> . P. —	506.	436.	645.
442. Common Nettle. <i>Urtica dioica</i> . P. —	484.	139.	746.
443. Lesser Nettle. <i>U. urens</i> . A. —	484.	140.	739.
444. The Alder Tree. <i>Betula Alnus</i> . —	510.	442.	
445. The Birch Tree. <i>B. alba</i> . —	510.	443.	
446. Arrow Head. <i>Sagittaria Sagittifolia</i> . P. —	21.	253.	172.
447. Feathered Water Milfoil. <i>Myriophyllum spicatum</i> . P. —	489.	150.	681.
448. Lesser Burnet. <i>Poterium Sanguisorba</i> . P. —	346.	203.1.	
449. Common Oak Tree. <i>Quercus Robur</i> . —	509.	440.	
450. The Beach. <i>Fagus sylvatica</i> . —	509.	439.	
451. The Horn-beam. <i>Carpinus Betulus</i> . —	513.	451.	
452. The Hazel Nut-tree. <i>Corylus avellana</i> . —	509.	439.	
453. Scotch Fir. <i>Pinus sylvestris</i> . —	510.	441.	
454. Common Fir, or Pitch Tree. <i>P. Abies</i> . —	510.	441.	193.
455. White Bryony. <i>Bryonia alba</i> . P. —	318.	261.	813.
DIOECIOUS PLANTS.			
456. Bay-leaved Sweet Willow. <i>Salix pentandra</i> . —	513.	449.	
457. Common White Willow. <i>Salix alba</i> . —	513.	447.	
458. Herbaceous Willow. <i>S. herbacea</i> . P. —	513.	448.7.	117.
459. The Osier. <i>S. viminalis</i> . —	513.	450.21.	
460. The common Gallow. <i>S. caprea</i> . —	513.	450.16.	245.
461. Sea Buckthorn. <i>Hippophae Rhamnoides</i> . —	512.	445.	265.
462. Sweet Willow Dutch Myrtle. <i>Myrica Gale</i> . —	510.	443.	327.
463. Common Hop. <i>Humulus Lupulus</i> . P. —	482.	137.	
464. White Poplar. <i>Populus alba</i> . —	512.	446.	
465. Black Poplar. <i>P. nigra</i> . —	512.	446.	

434. *Grass Wrack*. Besides the utility of this plant as an excellent manure in certain places, and for making mounds or walls (which will stand, when well constructed, for a vast number of years) cows and horses will frequently leave their pastures to feed in the seawater itself upon this plant. Gunner refers to an instance of some horned cattle that were very well sustained, through a severe winter, by the help of this plant only. Its utility for mounds against the encroachment of the sea, in apt situations, is well known, and there are instances

	O.	G.	Sh.	H.	S.	
424.						In hedges and ditches; in woods. 3.
425.	I	I	I	I		With the former. 3.
426.	O	I	O	O		In moist shady places in the North. 8.
427.						In meadows and pastures; among bushes. 5.
428.		I		O		In moist meadows and pastures, common.
429.	I			O		In meadows and pastures. 5, 6.
430.	I	I		O		With the foregoing. 6, 7.
431.	IO	O	I	O		In moist meadows and pastures, and woods. 6.
432.						In dry pastures. 5, 6.
433.	I	I				In moist woods and thickets. 5, 6.
434.	O	I		I	I	In the shallow salt waters abundantly.
435.		I		I	O	In watery places, and by the banks of rivers. 7.
436.		I		I		In marshy meadows and woods. 5—8.
437.	I	I	I			On the sides of rivers. 7.
438.	I	I	I			In watery places, and about rivers. 6.
439.	I	I	I	I	O	Common in watery places about rivers, &c.
440.	O	O	O	I	I	In standing and slow running waters. 7.
441.	I			O		In like places with the foregoing. 7, 8.
442.	O	O	O	O		In waste places every where. 7.
443.	O	O	O	O		In waste grounds, and arable land. 8.
444.	I	I	I	I	O	In moist woods and hedges. 7.
445.	I	I	I	I	O	In like places with the former. 7.
446.	O	I	I	I	I	In waters, and about ditches and rivers. 6.
447.		O	O			In stagnant waters. 6, 7.
448.	I	I	I	I		On downs, especially in a chalky soil. 7.
449.	I	I	I	I		<i>The pride and glory</i> of our woods. 4.
450.		I	I			In hedges and woods. 5.
451.						In woods, and copses. 5.
452.		I	O	O		In woods, copses, and hedges. 3.
453.	IO	O	I	O		Wild in Scotland. 5.
454.		I	O			With the former. 5.
455.	O	I	O	O	O	In hedges, woods, and thickets, common. 5.
456.		I	I			Frequent in the North of England. 4.
457.	I	I	I	I		By waters, and in woods and hedges. 4.
458.	I			I		On boggy mountains. 6.
459.	I	I	I	I		By waters. 4.
460.	I	I	I	I		With the former. 4, 5.
461.	O	I	I	I		On the sea coast, not common. 4.
462.	O	I	O	I		On bogs, in heathy grounds. 5.
463.	I	I	I	I	I	In wet hedges. 6.
464.	IO		I	I		In hedges about rivers. 3.
465.	I		I	I		About rivers, and in watery places. 3.

instances of its having stood in this way for upwards of eighty years.

435—439. *Sedges* are coarse and unwholesome food for those cattle that are obliged to eat them, and are said sometimes to occasion great flatulence, and disorder.

442—443. *Nettles* are eaten by sheep and cows, while the plants are young.

458. *Herbaceous Willow*. Acceptable to cows and horses. *Gunner* says the latter will leave grass to feed upon it.

	Hill.	Ray.	Flor. Dan.
466. Asp, or trembling Poplar. <i>Populus tremula</i> .	512.	446.	
467. Dogs Mercury. <i>Cynocrambe perennis</i> . P.	483.	138.	400.
468. French Mercury. <i>C. annua</i> . A.	483.	139.	
469. Black Bryony. <i>Tamus communis</i> . P.	319.	262.	
470. Common Juniper. <i>Juniperus communis</i> .	511.	444.	
471. Yew Tree. <i>Taxus baccata</i> . —	512.	445.	
POLYGAMOUS PLANTS.			
472. Sea Purslane. <i>Atriplex portulacoides</i> .	490.	153.11.	
473. Wild Orache. <i>A. bastata</i> . A.	489.	151.1.	
474. Narrow-leaved Orache. <i>A. patula</i> . A.	489.	151.2.	
475. The Ash Tree. <i>Fraxinus excelsior</i> .	522.	469.	
476. Black-berried Heath. <i>Empetrum nigrum</i> . P.	511.	444.	
CRYPTOGAMOUS PLANTS.			
477. Corn Horse-tail. <i>Equisetum arvense</i> . P.	531.	130.2.	
478. Wood Horse-tail. <i>E. Sylvaticum</i> . P.	531.	130.4.	
479. Marsh Horse-tail. <i>E. palustre</i> . P.	531.	131.9.	
480. River Horse-tail. <i>E. fluviatile</i> . P.	531.	130.1.	
481. Smooth Horse-tail. <i>E. limosum</i> . P.	531.	131.10.	
482. Female Fern, or Brakes. <i>Pteris aquilina</i> .	528.	124.	
483. Common Polypody. <i>Polypodium vulgare</i> .	526.	117.	
484. Common Male Fern. <i>P. Filix mas</i> .	527.	120.	
485. Stone Fern. <i>P. fragile</i> .	528.7.	125.	401.
486. Hart's Tongue. <i>Asplenium Scolopendrium</i> .	525.	116.	
487. Adder's Tongue. <i>Opbioglossum vulgatum</i> .	530.	128.	147.
488. Common Fucus, or Sea Oak. <i>F. vesiculosus</i> .		40.4.	
489. Sweet Fucus. <i>Fucus saccharinus</i> .		39.1.	416.
490. Thread Fucus. <i>F. Filum</i> .		40.3.	821.
491. Brown Boletus. <i>Boletus bovinus</i> .		11.2.	

467. *Dogs Mercury* is absolutely poisonous to sheep, which will sometimes eat it. Our own observations, many times repeated, have taught us that horses will not touch it.

469. *Black Bryony*. This is not a Swedish plant; it is common in our hedges, but horses refuse it.

471. *Yew Tree*. That the *Yew* is poisonous to horned cattle and horses, is proved beyond all doubt. Several cases of its fatal effects have fallen under our own knowledge. A memorable one occurs also in the *Phil. Transf.* vol. xlvii. p. 195.

477. *Corn Horse-tail* is said to be very noxious to horned cattle and sheep, both by *Gunner* and

	O.	G.	Sh.	H.	S.	
466.		I	I	o	o	In woods, particularly in boggy soils.
467.	o	I	I			In woods and thickets, and under hedges. 4, 5.
468.						In waste manured places : gardens. 9.
469.				I		In woods, thickets, and hedges. 6.
470.		I	I	I		On heaths and mountains in the North.
471.	o	I	I	o		On mountainous grounds. 3, 4.
472.	I	I	I			On the sea shores, common. 8.
473.						About dunghills ; and on the sea shores. 3, 9.
474.	I	I	I		I	In waste places, and about hedges. 8.
475.	I	I	I	o	o	In woods and hedges. 3, 4.
476.	o	o	o	o		On mountainous boggy places in the North. 4, 5.
477.	o	I	IO	o		On moist corn land. 3, 4.
478.		I		II		In shady moist woods. 4, 5.
479.		I				In marshes. 6.
480.	IO	I	II	I	I	In watery places, and about rivers. 3.
481.		o	I	o	IO	In shallow waters and marshes. 6.
482.	o	o	o	o	o	In woods, and on heaths, very common.
483.		o	o			On old walls, and stumps of trees.
484.	o	I	o			In woods, hedges, and shady lanes.
485.	I	I		I		In rocky places in the North.
486.	o		o	o		In shady, stony boggy places under hedges.
487.	o	o	o			In moist meadows and pastures.
488.	I		I			On the sea coast.
489.	I					On the same.
490.	II					On the same.
491.	II		I		I	Not uncommon in our woods.

and others ; and *Loefellus* says it brings on abortion, if pregnant ewes eat it.

478. *Wood Horse-tail*. Horses are extremely fond of this, and where it is abundant, as is the case in some of the northern parts of *Europe*, hay of this alone is made for their use ; as also of the *River Horse-tail*, which the cows like, and it is thought to encrease their milk.

488—90. *Fucus*. All these *Fucuses* are eaten by cows ; but *Gunner* says the *Thread Fucus* is not only acceptable to them, but very wholesome.

491. *Brown Boletus*. Horned cattle are fond of this *Fungus*, and eat it greedily ; but it is believed that it vitiates the milk, and lessens the quantity of it.

A
C A T A L O G U E
OF THE
WRITINGS and PUBLICATIONS of LINNÆUS:

With References to the Pages in which they are
mentioned in this Volume.

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SYSTEMA NATURÆ five Regna tria Naturæ
systematice propoſita, per Claſſes, Ordines
Genera & Species.

Edition 1. *Lugd. Bat.* fol. maxim. 1735. — 16.

This is comprized in twelve pages; and is the outline only of the ſucceeding editions. The *Swediſh* names are annexed.

2. *Holm.* 8vo. page 80. 1740.

Reviſed and augmented by LINNÆUS himſelf, with the addition of the general characters, and names to the ſubjects of the animal kingdom.

3. *Halæ.* 4to. oblong. p. 70. 1740.

By *J. Langer*, in *Latin* and *German*.

4. *Parifſis.* 8vo. p. 108. tab. 1. 1744.

By *Bernard Juffieu*; with the addition of the *French* names; otherwiſe the ſame as the ſecond edition.

5. *Halæ.*

5. *Halæ*. 8vo. p. 88. 1747.

By M. G. Agnetbler. With the *German* names; otherwise the same as the second edition.

6. *Holmiæ*. 8vo. p. 232. tab. 8.

1748. — — 60.

Embellished with a print of the Author. Augmented by the introduction of the essential characters of the genera of plants; and by the addition of the species to the animal and fossil kingdoms.

7. *Lipsiæ*. 8vo. p. 232. tab. 8.

1748.

By a Bookseller; with the *German* names.

8. *Holm*. 8vo. p. 136. 1753.

In the *Swedish* language. The vegetable kingdom by *Haartman*; the fossil by *Møller*.

9. *Lugd. Bat.* 8vo. p. 228. t. 8. } 60.

1756 — — } 54.

By Dr. *Gronovius*, with a few additions to the animal kingdom; otherwise copied from N° 6.

This edition was also printed at *Lucca*, in 1753.

10. *Holm*. 8vo. 2 tom. 1758. — 60.

Tom. 1. p. 821. Animal kingdom. Enlarged by the addition of the synonyms.

Tom. 2. p. 560. Vegetable kingdom. Enlarged by the addition of the species under each genus.

11. *Lipsiæ*. 8vo. very faulty.

12. *Holm*. 8vo. 3 tom. 1766, 1767,

1768.

Tom. 1. in 2 parts, p. 1327. Animals. 60.

Tom. 2. p. 736. Vegetables. — 110.

Tom. 3. p. 236. Fossils. — 131.

Vindob.

Vindob. 8vo. 3 tom. 1, 1767.
2, 3, 1770.

From the foregoing ; the pages corresponding.

13. *Gottingæ et Gotbæ.* 8vo. 1774. 210.

Tom. 1. only, by Dr. Murray, with *Linnaeus's* additions and emendations.

HYPOTHESIS NOVA de febrium intermitten-
tium causa. *Harderovic.* 4to. 1735. 10.

Also, in the first volume of the *Amanitates Academi-
cæ*, printed at *Leyden*, 1749. — —

FUNDAMENTA BOTANICA. *Amst.* 12 mo. p. 36.
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MUSEUM REGIS ADOLPHI. *Holm.* fol. max.

1754.

Hafelquistii, Iter Palæstinum. *Holm.* 8vo. 1757. 58.

Loefflingii, Iter Hispanicum. *Holm.* 8vo. 1758. 58.

Both published by LINNÆUS, from posthumous papers; in the Swedish tongue.

Oratio regia. in Swedish. *Upsal.* fol. 1759.

DISQUISITIO de sexu PLANTARUM. *Petrop.*

4to. 1760.

GENERA MORBORUM. *Upsal.* 4to. 1763. 166.

MUSEUM REGINÆ ULRICÆ: et MUSEI REGIS ADOLPHI. Tomi 2di prodromus. *Holm.*

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MANTISSA PLANTARUM, Generum editionis sextæ, et specierum editionis secundæ.

Holm. 8vo. 1767.

MANTISSA ALTERA, cum Appendice Regni

Animalis. *Holm.* 8vo. 1771.

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holm

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MISTAKES.

- Page 14. line 20. after *Succia*, add Edit. I.
 17. — 15. for *abiffent*, read *abiffent*.
 23. — 15. for 346, read 364.
 45. — 10. *dela* would have.
 122. — 19. for 335, read 235.
 140. — 16. for granite, read *Granites*.
 202. — 30. for *sexus*, read *sexus*.
 203. — 30. for *trydactylis*, read *tridactylis*.
 205. — 5. for *Fannum*, read *Fannum*.
 207. — 8. for *indigina*, read *indigena*.
 209. — 19. for *nciperem*, read *inciperem*.
 227. — 8. *dela* given.
 240. — 27. for 358, read 327.
 240. — 30. for 557, read 577.
 250. — 2. for intersting, read interesting.
 301. — 24. for 1276, read 1076.
 323. — 18. for *Acetaria*, read *Acetaria*.
 336. — 27. for *Bracte*, read *Bractea*.
 346. — 21. for *Forskalea*, read *Forskoblea*.
 370. — 18. for 933, read 983.
 384. — 34. col. 3. for 1.15. read 11.15.
 ibid. — 26. col. 3. for 87, read 687.



